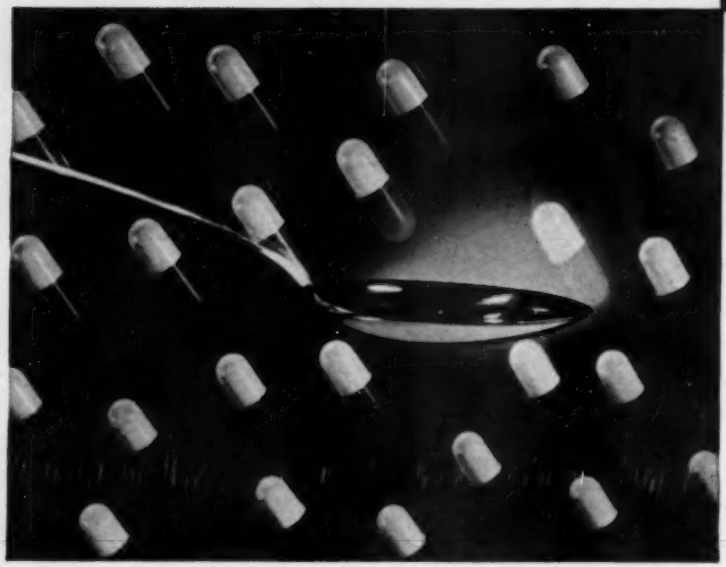
Medical

Wyeth®



Lipotropic Therapy can be Adequate...with WYCHOL

WYCHOL Syrup provides a potent combination of lipotropic factors—choline and inositol. It is so palatable, patients will gladly adhere to the prescribed dosage schedule—and thus secure the full benefits of therapy.

And Now, a Practical Way to Maintain Day-Long Therapy

Prescribe the new, convenient **WYCHOL CAPSULES** to assure continued therapy while the patient is away from home.

For impaired fat metabolism and cirrhosis of the liver—intensive, sustained lipotropic therapy is recommended and facilitated by the combination Syrup and Capsule regimen.

WYCHOL®

CHOLINE AND INOSITOL Wyeth

Wyeth Incorporated, Philadelphia 2, Pa.

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NO LAXATIVE LAG

with Sal Hepatica

When your patients ask about fast laxation recommend effervescent Sal Hepatica. There's no lag, no continuing discomfort while your patients wait for *this* laxative to act. Taken before the evening meal, satisfactory action is assured before bedtime, thus permitting a sound night's sleep. Taken in the morning before breakfast, laxation will usually occur within the hour.

Sal Hepatica's action is gentle, too, for its fluid bulk provides *soft* pressure.

Sal Hepatica suits your patients' convenience—and yours. Antacid Sal Hepatica also combats gastric hyperacidity which so often accompanies constipation.

*Aperient

*Laxative

*Cathartic

*Average dose

SAL HEPATICA, a product of BRISTOL-MYERS
19 West 50th Street, New York 20, N. Y.

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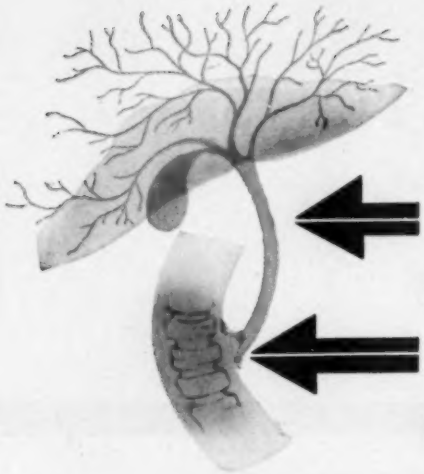

free flow
and
outflow
of bile

CHOLATROPIN

HYDROCHOLERETIC ANTISPASMODIC, LAKESIDE

In hepatobiliary disorders CHOLATROPIN produces unimpeded irrigation of the entire biliary tract by its dual action. Volume and fluidity of bile are increased by dehydrocholic acid. Homatropine relaxes the sphincter of Oddi and bile ducts to facilitate biliary drainage and prevent rise in intrabiliary pressure.

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CHOLATROPIN: Each sugar-coated tablet contains dehydrocholic acid 250 mg., and homatropine methylbromide 2.5 mg. In bottles of 100 and 500. Average dose: One tablet two or three times daily.

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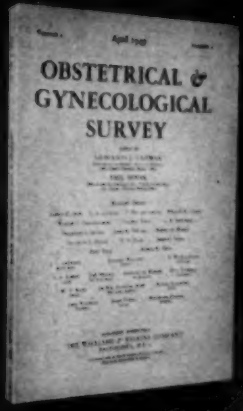
MEDICAL BOOK NEWS



"... these statistics are the best that have been reported. In fact, they couldn't be any better."

Editor: Obstetrical & Gynecological Survey
Vol. 4, No. 2: April, 1949: page 190

The statistics referred to are those reported by Dr. [illegible] W. Smith in her article, "Diethylstilbestrol in the Prevention and Treatment of Complications of Pregnancy", in the November, 1943, issue of *The American Journal of Obstetrics and Gynecology*. This study of 632 pregnancies showed that, "under stilbestrol treatment the habitual aborter enjoys the same outlook for a living baby as does the average gravida. This is what I mean by saying that these statistics are the best that have been reported".[1]

This report affords additional evidence that the treatment of threatened and habitual abortions with **des** — Grant Process diethylstilbestrol — as pioneered by Karl John Karnaky[2], is the most effective treatment available.

The work of Silbernagel and Burt[3], and of Rosenblum and Melinkoff[4] showed that with diethylstilbestrol *68.4% more* cases were carried to term than with progesterone. In fact, it is now felt that the administration of progesterone may actually hasten abortion[5].

des is the only diethylstilbestrol prepared by the unique Grant Process of triple crystallization. Highly micronized **des** tablets are dissolved within a few seconds and are uniformly absorbed into the blood stream. **des** is specifically designed for the treatment of threatened abortion, habitual abortion and premature labor. The living results obtained with **des** are the best that have been reported. "In fact, they couldn't possibly be any better."

des IS BEST

REFERENCES
1. Editor: Obs. and Gyn. Survey. 56. 831-834. Nov. 1948. 2. Karnaky, K. J. Estrogenic Tolerance in Pregnant Women. Amer. Jr. Obs. and Gyn. 53. 312-316. 1947. 3. Silbernagel, W. M. and Burt, O. P. Ohio State Med. Jr. 39. 430 May 1943. 4. Rosenblum and Melinkoff. Preservation of the Threatened Pregnancy with Particular Reference to the Use of Diethylstilbestrol. West. Jr. Surg. Obs. and Gyn. 55. 597-603. Nov. 1947. 5. Hamblen, E. C. Endocrinology of Woman. Springfield, Ill. Charles E. Thomas, 1949. p. 476.

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Medical TIMES

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Incorporating the Long Island Medical Journal and Western Medical Times

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The Squibb RUBRA Family

	RUBRAMIN *per cc.*	RUBRAFOLIN *per capsule*	RUBRATON *per teaspoonful*	RUBRAFERATE *per capsule*
VITAMIN B_{12}	15, 30 & 50 micrograms	25 micrograms	4.17 micrograms	4.17 micrograms
FOLIC ACID		1.67 milligrams	0.26 milligrams	0.26 milligrams
IRON			220 milligrams ferric ammonium citrate	130 milligrams ferrous sulfate exsic.
VITAMIN C				50 milligrams
DOSAGE THERAPEUTIC	15 to 30 micrograms daily for a week or more; when neurologic involvement is present, 50 micrograms or more daily.	1 or 2 capsules daily	2 teaspoonfuls t.i.d.	2 capsules t.i.d.
MAINTENANCE	Generally, 30 to 50 micrograms twice a month; when neurologic involvement is present, 50 micrograms a week.	1 capsule daily	1 teaspoonful t.i.d.	1 capsule t.i.d.
SUPPLY	1 cc. ampuls, 15 & 30 micrograms of vitamin B_{12} per ampul. 5 & 10 cc. vials, 30 micrograms per cc. 10 cc. vials 50 micrograms per cc.	Bottles of 100	Pint and gallon bottles	Bottles of 100

NOTE: The above are average doses. As with all antianemia preparations, dosages must be adjusted to meet the needs of the individual patient.

Also available: Solution Rubramin Crystalline (Squibb Crystalline Vitamin B_{12} Solution) in 1 cc. ampuls, 15 micrograms of crystalline vitamin B_{12} per ampul, and 10 cc. vials, 30 micrograms of crystalline vitamin B_{12} per cc.

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(brand of chlorprophenpyridamine maleate)

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WHEAT-EGG-MILK-FREE DIET
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14-DAY FOOD DIARY

Prepared at your request . . . to fit your needs . . . to save your time when instructing patients . . . to make it easy for patients to follow the regimen you prescribe.

DIET SHEETS — Each includes: lists of allowed and forbidden foods; guide for selecting a nutritionally adequate diet; special recipes.

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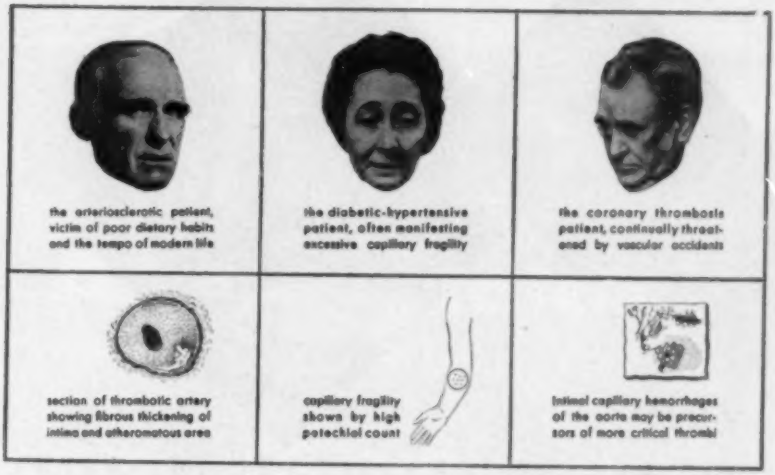
POTENT PROTECTION

> > > against the combined threats of arteriosclerosis and capillary fragility



the arteriosclerotic patient, victim of poor dietary habits and the tempo of modern life

the diabetic-hypertensive patient, often manifesting excessive capillary fragility

the coronary thrombosis patient, continually threatened by vascular accidents

section of thrombotic artery showing fibrous thickening of intima and atheromatous area

capillary fragility shown by high petechial count

intimal capillary hemorrhages of the aorta may be precursors of more critical thrombi

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TRADEMARK

for the life that begins at forty

VASCUTUM* makes possible a dual attack, both prophylactic *and* therapeutic, in the two-front battle against hypercholesterolemia and capillary fragility, combining in one medication:

1 Potent amounts of lipotropic agents, to promote decholesterolization in atherosclerosis, liver cirrhosis and diabetes mellitus.

2 Therapeutic amounts of rutin and ascorbic acid, to combat related capillary weakness effectively. Damaging retinal hemorrhage often results from excessive capillary fragility and associated abnormal cholesterol deposits.

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Choline	1 Gm.	Pyridoxine HCl	4 mg
Inositol	1 Gm.	Rutin	150 mg.
dl-Methionine	500 mg.	Ascorbic Acid	75 mg.

VASCUTUM marks a distinct advance in the management of interrelated degenerative diseases affecting the middle-aged and elderly.

SUPPLIED in bottles containing 100 tablets.

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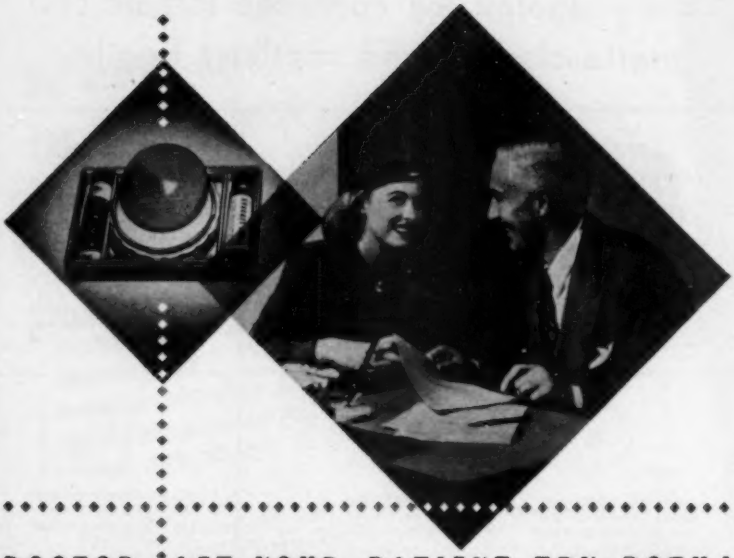

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ACTIVE INGREDIENTS: BORIC ACID 2.0% OXYQUINOLIN BENZOATE 0.02% AND PHENYLMERCURIC ACETATE 0.02% IN SUITABLE JELLY OR CREAM BASES

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READILY SOLUBLE
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AVAILABLE IN BOTTLES OF 100 TABLETS

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Now- trace minerals added

the Stuart formula

The Stuart Formula is a complete maintenance multivitamin, containing a complete B Complex including *natural* factors. Two Stuart Formula tablets also provide adult maintenance amounts of iron and iodine *plus* trace minerals.

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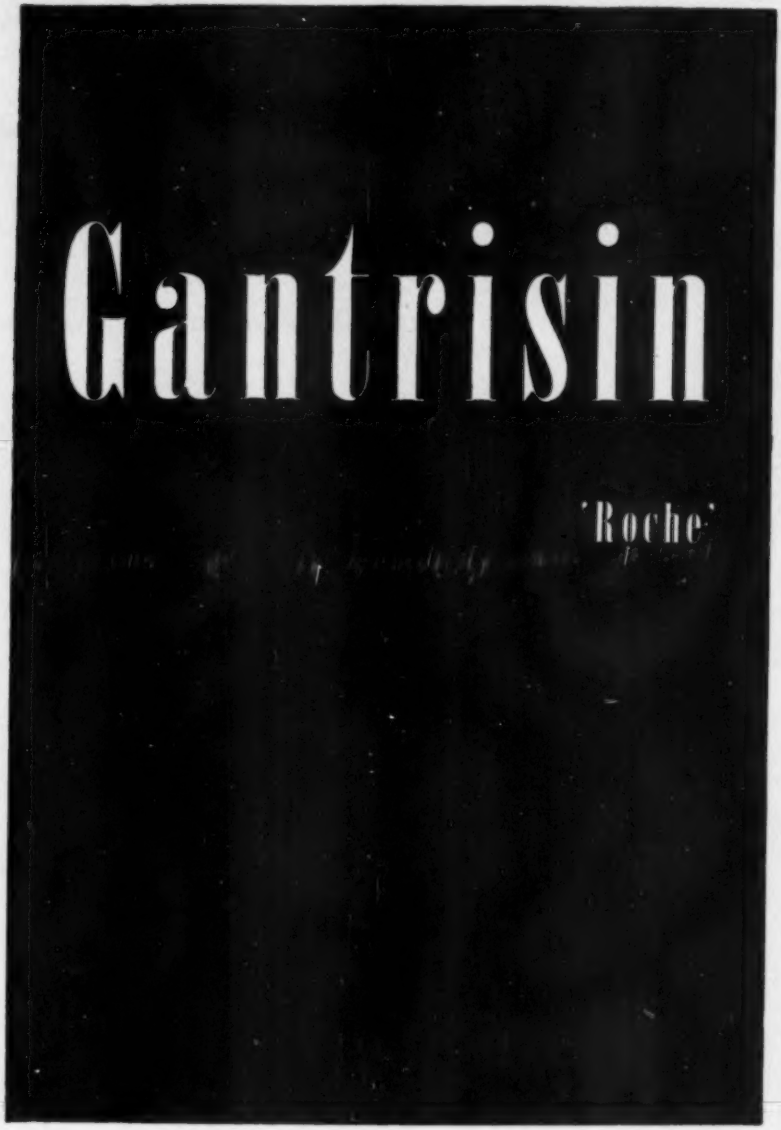
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'Roche'

antibacterial action plus...

■ **greater solubility**

Gantrisin is a sulfonamide so soluble that there is no danger of renal blocking and no need for alkalinization.

■ **higher blood level**

Gantrisin not only produces a higher blood level but also provides a wider antibacterial spectrum.

■ **economy**

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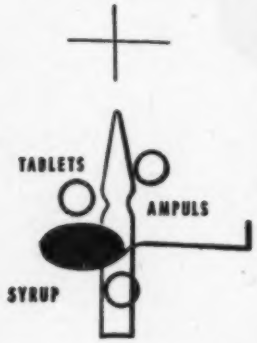

■ **less sensitization**

Gantrisin is a single drug—not a mixture of several sulfonamides—so that there is less likelihood of sensitization.

GANTRISIN®—brand of sulfisoxazole
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appetite must be controlled

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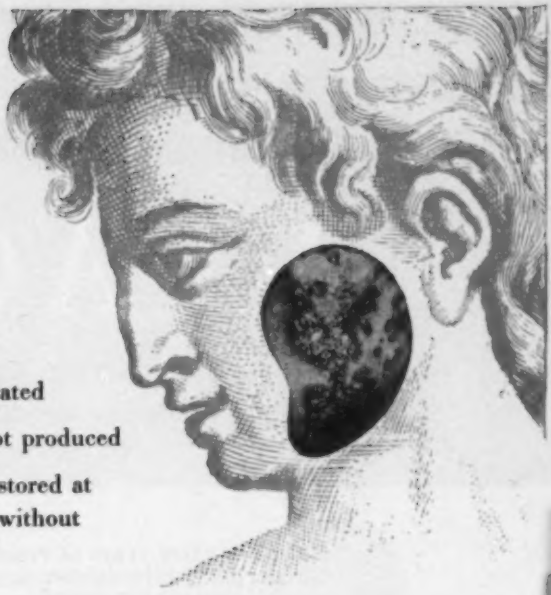
Dexedrine* Sulfate tablets • elixir

A most effective drug for control of appetite in weight reduction

*T.M. Reg. U.S. Pat. Off. for dextro-amphetamine sulfate, S.K.F.

1. Walker, W.J.: Obesity as a Problem in Preventive Medicine, U.S. Armed Forces M.J. 1:393, 1950.
2. John, H.J.: Dietary Invalidism, Ann. Int. Med. 32:595, 1950.



Topical therapy . . .
effective and safe
for continued use

- because Terramycin is well tolerated
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- because the medication may be stored at room temperature for 12 months without significant loss of potency

CRYSTALLINE Terramycin HYDROCHLORIDE

for topical use only OINTMENT

An ointment of Crystalline Terramycin Hydrochloride in a petrolatum base. Each Gm. of ointment provides 30 mg. of Terramycin.

indicated for:
superficial pyogenic infections
pyoderma
pustular dermatitis
minor wound infections
infections associated with minor burns
prophylaxis

particularly valuable in mixed infections

In severe local infections which may become systemic, the ointment should be used as an adjunct to oral therapy with Crystalline Terramycin Hydrochloride Capsules.

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faster, more complete absorption
up to 400% higher blood levels with aqueous vitamin A

natural vitamin A
therapeutic activity proven by years of clinical use

well tolerated
fish liver taste and odor removed by special process

shorter treatment time, smaller dosage
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Each **VI-AQUA** Capsule provides:

VITAMIN A* (natural)	5000 Units
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THIAMINE HCl (B_1)	5 mg.
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ASCORBIC ACID (C)	50 mg.
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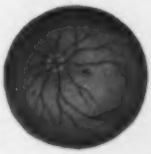
FOR YOUR CARDIOVASCULAR PATIENT

Normal. Capillaries clearly defined; no transudation, hemorrhage, or papilledema.



Borderline. Capillaries show irregularities, slight transudation. Incipient papilledema.

Abnormal. Capillaries tortuous, with areas of hemorrhage and transudation. Papilledema.

RUTAMINAL* provides the extra protection of rutin and ascorbic acid...in support of the cardiotonic action of aminophylline, and the sedation of phenobarbital.

RUTAMINAL...

Whenever aminophylline and phenobarbital are indicated...

*RUTAMINAL is a trademark of Schenley Laboratories, Inc., and designates exclusively its brand of tablets containing rutin, ascorbic acid, aminophylline, and phenobarbital.

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LAWRENCEBURG • INDIANA

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again prove value of **Westhiazole Vaginal** in **cervicitis** and **vaginitis.** Useful in clearing up cervical mucous plug or mucopurulent discharge; promotes "rapid healing" after cauterization; "gratifying results" when applied before and after hysterectomies and plastic repair.

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single-dose disposable applicators

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a sterile jelly,
10% SULFATHIAZOLE,
4% UREA, 3% LACTIC ACID,
1% ACETIC ACID in a
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Acidifies, normalizes vaginal pH, encourages growth of friendly Doderlein bacilli, combats secondary as well as primary infection, speeds healing.

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and reprint[1]
by Stein, I. F. and
Kaye, B. M.: Su. Clin.
North Am. 30:259, 1950.

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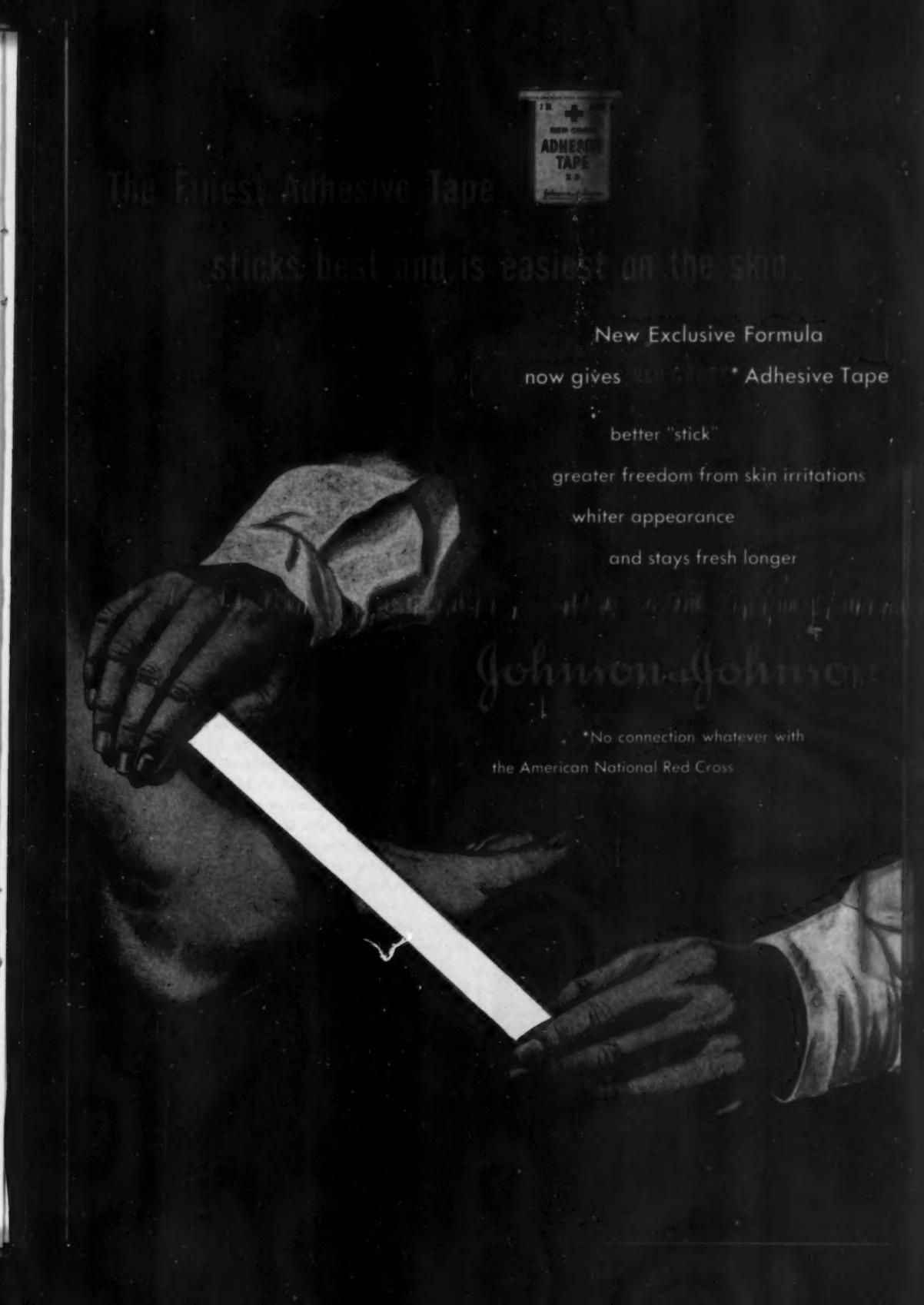
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sticks best and is easiest on the skin
New Exclusive Formula
now gives * Adhesive Tape
better "stick"
greater freedom from skin irritations
whiter appearance
and stays fresh longer
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LETTERS TO THE EDITOR

This department is offered as an Open Forum for the discussion of topical medical issues. All letters must be signed. However, to protect the identity of writers, who are invited to comment on controversial subjects, names will be omitted when requested.

MORE ON INFANT FEEDING

"We recently read an article entitled 'Infant Feeding,' in the MEDICAL TIMES, November 1950 issue. We found the article very interesting and believe that it is a good way to keep the physician up to date on recent developments in infant nutrition.

"Swift & Company is also interested in informing the physician of recent advances in infant feeding techniques. As a part of our contribution in this field, we have established a number of clinical research studies of infant nutrition at various hospitals and universities. Knowing of your interest in obtaining information on developments in infant and child care, we are taking it upon ourselves to inform you about research we are sponsoring on the role of meat in the infant diet. The research program is designed to investigate —1. the tolerance of the infant to meat; 2. the ability of the infant to utilize the nutrients in meat; 3. the benefits of including meat in an infant's diet.

"Dr. Karl Mason of the University of Rochester, in collaboration with Dr. Sisson and others, has fed strained meats to premature infants one week old. The conclusion resulting from his study indicates that meat may be successfully introduced at any age. Even a premature infant can

—Continued on page 46a

ABOLISH PAIN RESTORE FUNCTION IN THE *Arthritic*

The thousands of once disabled arthritics, who have taken DARTHRONOL as part of a systemic rehabilitation program and returned to gainful and active life, are evidence of the efficacy of DARTHRONOL in:

- ABOLISHING PAIN
- DIMINISHING SOFT TISSUE SWELLING
- RESTORING USEFUL FUNCTION
- IMPROVING GENERAL SYSTEMIC EFFICIENCY
- PROMOTING A SENSE OF OPTIMAL WELL-BEING

EACH CAPSULE CONTAINS

Vitamin D (Irradiated Ergosterol)	50,000 U.S.P. Units
Vitamin A (Refined Fish Liver Oil)	5,000 U.S.P. Units
Vitamin C (Ascorbic Acid)	75 mg.
Vitamin B_1 (Thiamine Hydrochloride)	3 mg.
Vitamin B_2 (Riboflavin)	2 mg.
Vitamin B_6 (Pyridoxine Hydrochloride)	0.3 mg.
Niacinamide	15 mg.
Calcium Pantothenate	1 mg.
Mixed Tocopherols (Type IV)	4 mg.

Specify **Darthronol**

J. B. ROERIG AND COMPANY 536 LAKE SHORE DR., CHICAGO 11, ILLINOIS

FOR YOUR PATIENT

with Bronchial Asthma, Hay Fever, Urticaria

LUASMIN

Brewer

CAPSULES
PLAIN
(for prompt action)

TABLETS
ENTERIC-COATED
(for delayed action)

One capsule and one tablet, taken at bedtime will provide almost all patients with eight hours relief and sleep. The relief can be sustained by using the capsules during the day at 4 hour intervals as required.

Each capsule and enteric-coated tablet contains:

Theophylline Sodium Acetate .....(3 gr.) 0.2 Gms.
Ephedrine Sulfate .....(½ gr.) 30 Mg.
Phenobarbital Sodium .....(½ gr.) 30 Mg.

Capsules and tablets in half the above potency, available for children and mild cases in adults.

For samples—just send your Rx blank marked MTS

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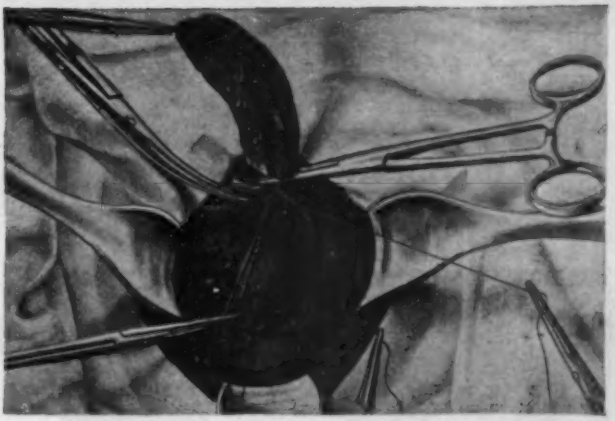
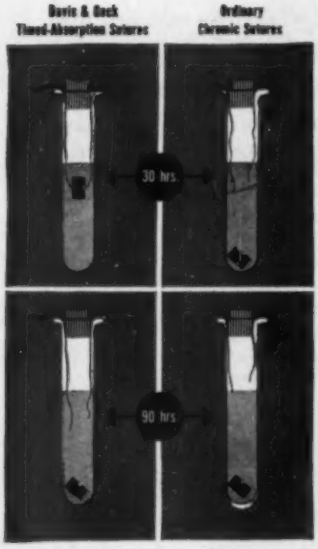
During the critical first 4 days depend on



"TIMED-ABSORPTION" CATGUT

Because "timed-absorption" catgut (surgical gut) has a *measurable* and *predictable* rate of digestion, demonstrated by extensive tests, it remains intact until the wound has gathered support of its own. Because "timed-absorption" catgut does not digest prematurely, it assures strength when needed most—during the critical first 4 days following major surgery.

Processed by an exclusive Davis & Geck method embodying accurately graded degrees of tanning, "timed-absorption" catgut has an absorption curve that parallels the changing tissue conditions of healing. Resistance to digestion is maximal during *early* repair. Later, when artificial strength is no longer required, dissolution is rapid and complete and no remnants of gut remain.



Comparison of D & G "timed-absorption" medium chromic catgut, size 0, with ordinary medium chromic size 0 catgut. Both types of catgut are suspended in a trypsin solution and weighted. Note that at the end of 30 hours D & G "timed-absorption" catgut remains intact; the weight is still held suspended up to 90 hours. Contrast with an ordinary chromic catgut suture which has begun to digest and breaks under the slight tension created by the weight at 30 hours. In human tissue all chromic sutures are digested *more slowly*, but the ratio between the two types remains the same.

D&G catgut sutures have a special matte finish. They tie readily and do not slip at the knot. Pliability is exceptional and tensile strength, diameter for diameter, is guaranteed unexcelled by any other brand. No wonder so many surgeons agree on D&G.

There is a D & G suture for every surgical purpose. Available through responsible dealers everywhere.

DAVIS & GECK, INC.

57 WILLOUGHBY ST., BROOKLYN 1, N. Y.

DDC-41(B)

For Mild, Gradual,

Prolonged Vascular Dilatation in

Arterial Hypertension

As a valuable adjunct to rest and other accepted therapeutic measures, Erythrol Tetranitrate induces mild, gradual vascular dilatation.

Orally administered, Erythrol Tetranitrate Merck lessens the muscular tone of arteries, tending to decrease the effect of blood pressure on the arterial walls and thereby relieving the burden on the heart.

Its action in increasing the flow of blood and oxygen to the myocardium makes it useful also for prophylaxis and relief in attacks of angina pectoris.

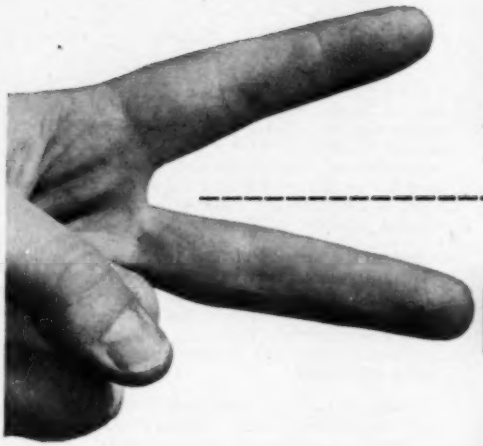
Literature will be mailed on request.

ERYTHROL TETRANITRATE MERCK

(Erythrityl Tetranitrate U.S.P.)

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

Two Ways that Carnation Protects Your Recommendation:



1 Every can of evaporated milk that bears the Carnation label is processed in Carnation's *own* plants, under Carnation's *own* supervision. Carnation never has sold—and never will sell—milk processed by another company.

2 To meet the strict standards of the medical profession, Carnation Milk is processed with *"prescription accuracy."* Rigid control and constant testing insure complete uniformity of milk solids content, viscosity, curd tension, and *quality*—day in and year out.

THOSE ARE THE REASONS why you can specify Carnation Evaporated Milk—*by name*—with absolute confidence that Carnation will justify and protect your recommendation.

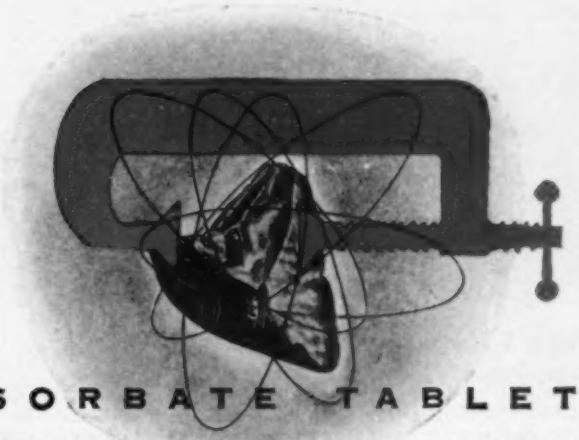
We believe those two facts explain why 8 out of 10 mothers who use Carnation Milk say, *"My doctor recommended it."*

"From Contented Cows"

THE MILK EVERY DOCTOR KNOWS

The emotional stresses of current times are responsible for greater demands upon the adrenals.

The clinical manifestations of adrenal exhaustion are usually asthenia, hypotension and/or disturbed water balance.



CORTISORBATE TABLETS

orally assayed Charcoal Adsorbate of Adrenal Cortex—Schieffelin

CORTISORBATE provides the life-maintaining principle of the adrenal cortex in oral form for greater patient acceptance and cooperation.

Dosage: 1 to 3 Oral Rat Units per day — in divided doses at convenient intervals — usually produce satisfactory results. Used preoperatively to prevent surgical shock. 3 to 6 Oral Rat Units per day over two to three weeks.

Supplied: ½ O.R.U. tablets in bottles of 20 and 100; 1 O.R.U. tablets in bottles of 20 and 100

Schieffelin & Co. since 1794 / pharmaceutical and research laboratories 60 Cooper Square, New York 3, N. Y.

MODERN MEDICINALS

Physicians will find that these brief resumes of essential information relative to the newer products are so prepared that they may be removed and pasted on standard 3 x 5" file cards, and filed for ready reference.

Vi-Aqua

5-51

MANUFACTURER: U. S. Vitamin Corp., New York, N. Y.
INDICATIONS: Aqueous solution of the oil-soluble vitamins means faster, more complete absorption with shorter treatment time and lesser dosage required; in the prevention and treatment of multiple vitamin deficiencies.
ACTIVE CONSTITUENTS: The oil-soluble vitamins A, D and E made water solubie, together with B complex vitamins and vitamin C—in capsules.
DOSAGE: One, two or more capsules daily.
HOW SUPPLIED: Bottles of 50,100 and 1,000 capsules.

Triple Sulfonamide Preparation

5-51

MANUFACTURER: Wyeth Incorporated, Philadelphia, Penna.
INDICATIONS: In various infections responding to sulfonamide therapy.
ACTIVE CONSTITUENTS: Combinging equal parts of sulfadiazine, sulfamerazine and sulfamethazine, in tablet form and suspension utilizing a special suspending agent. A total of 0.5 Gm. of sulfonamides are contained in each tablet or in each teaspoonful (5 cc.) of the suspension.
DOSAGE: As indicated.
HOW SUPPLIED: In tablet form and suspension.

Docehema Capsules

5-51

MANUFACTURER: Ives-Cameron Company, Inc., 22 East 40th St., New York 16, New York.
INDICATIONS: In the treatment of most of the commonly encountered microcytic hypochromic or macrocytic hyperchromic anemias.
ACTIVE CONSTITUENTS: Each capsule contains: Ferrous sulfate exsiccated (2 grs.), 129.0 mg.; folic acid, 0.5 mg.; vitamin B_{12}, U.S.P., 4.0 mcg.; ascorbic acid, 50.0 mg.; and insoluble liver fraction (3 grs.), 192.0 mg.
DOSAGE: 5 to 8 capsules per day supplying 10 to 16 grains of ferrous sulfate are usually considered adequate in iron deficiency anemias in adults. The dosage depends on the hematological response of the individual patient which can be easily checked by routine blood counts.
HOW SUPPLIED: In bottles of 100 gelatin capsules.

Terramycin Troches

5-51

MANUFACTURER: Charles Pfizer & Co., Inc., Brooklyn, New York.
INDICATIONS: Used in troche form against oral, dental and throat infections.
ACTIVE CONSTITUENTS: Contains the equivalent of 15 mg. of crystalline teramycin base.
DOSAGE: To be dispensed only on the prescription of physicians or dentists.
HOW SUPPLIED: Mint-flavored and packaged in individual, foil-wrapped strips of 24.

—Continued on page 42a

Prelude to asthma?

not necessarily...

Tedral, taken at first sign of attack, often forestalls severe symptoms.

in 15 minutes...Tedral brings symptomatic relief with a definite increase in vital capacity. Breathing becomes easier as Tedral relaxes smooth muscle, reduces tissue edema, provides mild sedation.

for 4 full hours...Tedral maintains more normal respiration for a sustained period—not just a momentary pause in the attack.

Prompt and prolonged relief with Tedral can be initiated any time, day or night, whenever needed without fear of incapacitating side effects.

Tedral provides:

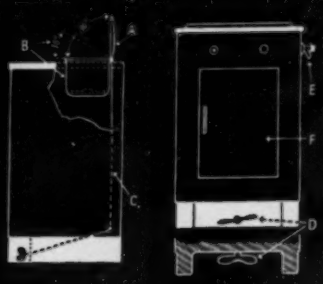
theophylline	2 gr.
ephedrine	⅜ gr.
phenobarbital	⅛ gr.

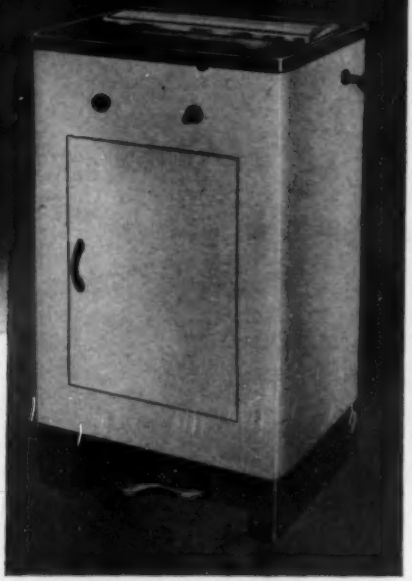
in boxes of 24, 120 and 1000 tablets

Tedral

CHILCOTT *Laboratories* DIVISION OF The Maltine Company MORRIS PLAINS, NEW JERSEY

Ultra-Modern in every detail





"American" CABINET MODEL
SMALL INSTRUMENT STERILIZERS

combine *exclusive* highlights in design and construction that insure greater operating safety, convenience and long periods of satisfactory service.

(a) **Cover**—fabricated of stainless steel and elevating to full 90° angle to permit easy removal of tray without interference.

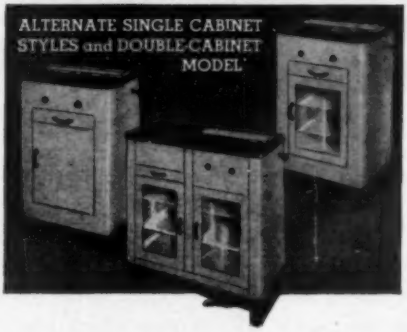
(b) **Cover**—elevates to 30° angle before immersed tray starts to raise, thus enabling operator to observe water level at all times to insure immersion of instruments.

(c) **Cover Elevating Mechanism** — Concealed entirely within cabinet, thus allowing cabinet to be placed flush against the wall.

(d) **Recessed Foot Pedal**—Eliminates tripping annoyances and permits greater freedom of access for operator.

(e) **Drain Faucet**—a special screw-type valve which will not stick or score and may be taken apart instantly for cleaning without tools.

(f) **Doors**—Solid double-panel of glass, hung on fully concealed steel hinges, fitted with Bakelite handle, spring catches and rubber bumpers.



BURN-OUT-PROOF!
An automatic safety measure protecting both Sterilizer and instruments against possible damage due to depletion of water supply in chamber.

ASK YOUR DEALER or write us for further information

AMERICAN STERILIZER COMPANY
Erie, Pennsylvania.

Double THE POWER TO RESIST FOOD...

in Obesity!

No one appreciates will-power more than the obese patient on a reducing diet. With all the high-caloric temptations that constantly beset obese people, supplemented will-power is really required to resist food.

OBOCELL, a new therapeutic substitute for will-power, is based upon the newer concepts of hunger and appetite. Each Obocell tablet supplies (1) the widely accepted appetite-curbing action of dextro-amphetamine phosphate, PLUS (2) the well recognized bulking action of methylcellulose, a non-nutritive material that suppresses bulk hunger by filling the intestines.

Composition: Each tablet contains Dextro-Amphetamine Phosphate, 5 mg.; Methylcellulose, 150 mg. **Supplied:** Bottles of 100, 500, 1000 at prescription pharmacies everywhere.

Literature and Samples on Request.

Obocell

IRWIN, NEISLER & COMPANY • DEPT. MT. • DECATUR, ILLINOIS

—Continued from page 38a

Neo-Hombreol (F)

5-51

MANUFACTURER: Organon Inc., Orange, N. J.

INDICATIONS: Provides efficient treatment for all disturbances in which male hormone therapy is indicated. In the male, these include the male climacteric, impotence due to hormone deficiency and eunuchism. In the female, advanced breast cancer, such gynecologic disturbances as functional uterine bleeding, dysmenorrhea, and menopausal symptoms, and inhibition of lactation and after-pains.

ACTIVE CONSTITUENTS: Each cc contains 25 mg. of testosterone as fine crystals in an aqueous vehicle containing 0.04 per cent polysorbate 80, 0.45 per cent phenol as a preservative, and made isotonic with 4.1 per cent dextrose.

DOSAGE: In male climacteric (25 mg. 2 or 3 times a week); impotence due to hormone deficiency (25 mg. 3 or 4 times a week); eunuchism (25 mg. 3 to 5 times a week); all adjusted to suitable levels for maintenance. In the femal, advanced breast cancer (50 to 100 mg. 3 times a week); functional uterine bleeding (25 mg. on alternate days for 3 or 4 injections); suppression of lactation (25 mg. twice daily for 2 days after delivery); dysmenorrhea (25 to 50 mg. in divided doses over last 7 to 10 days of the cycle); and menopause (12½ to 25 mg. per week).

HOW SUPPLIED: 10 cc. vial, boxes of 1 and 6.

Theomersyl

5-51

MANUFACTURER: The Central Pharmacal Company, Seymour, Indiana.

INDICATIONS: As a diuretic in nephrosis and cardiorenal disease; an aid in controlling the ascites accompanying advanced liver disease; and an adjunct in congestive heart failure and before and during digitalis therapy.

ACTIVE CONSTITUENTS: Mersalyl U.S.P. and theophylline-sodium glycinate.

DOSAGE: 0.5 cc. intramuscularly, preferably in the gluteal region. If no untoward reaction is produced, the dose is increased to 1 cc. the following day. Subsequent injections are given every few days, as needed to maintain satisfactory diuresis. Care should be taken to avoid subcutaneous injection. May also be given by slow, careful intravenous injection, in doses of 0.5 to 1 cc. The medication should be given in the morning to avoid disturbing the patient's rest at night.

HOW SUPPLIED: In 10 cc. vials; and 2 cc. ampuls, boxes of 6 and 25.

Bevidox Concentrate Dulcets

5-51

MANUFACTURER: Abbott Laboratories, North Chicago, Illinois.

INDICATIONS: As a hematinic agent and for experimental use as a growth factor. For use in the treatment of macrocytic anemias other than pernicious anemia and for other conditions for which vitamin B_{12} may be beneficial.

ACTIVE CONSTITUENTS: Candy medication designed for administration to children. Each tablet contains Bevidox Concentrate equivalent to 10 micrograms of vitamin B_{12}. The tablets have a pleasant raspberry flavor, color and odor.

DOSAGE: As a growth factor, 10 mcg. daily in children. As a hematinic agent, 30 mcg. or more weekly, depending on the condition of the patient.

HOW SUPPLIED: In bottles of 100 tablets.

Pentresamide Tablets

5-51

MANUFACTURER: Sharp and Dohme, Inc., Philadelphia 1, Pa.

INDICATIONS: For simultaneous treatment of infections where oral administration of penicillin and the sulfonamides is indicated. Recommended for treatment of pneumonia, gonorrhea, mastoiditis, scarlet fever and urinary tract infections. Pentresamide can also be used as prophylactic measure before and after tooth extraction, tonsillectomy, cesarean section and minor surgical procedures.

ACTIVE CONSTITUENTS: A combination of potassium penicillin G with the three most soluble, least toxic systemic sulfonamides, sulfamerazine, sulfadiazine and sulfamethazine.

DOSAGE: Initial adult dosage is 6 tablets, administered on a fasting stomach. Maintenance dose is two tablets every four hours; this may be adjusted according to clinical judgment.

HOW SUPPLIED: In bottles of 60.


Primary Atypical Pneumonia
you know what it is...
pure crystalline antibiotic
of known chemical structure
Lymphogranuloma Venereum
Bacterial Pneumonia
Scrub Typhus
Enteric Fever
(salmonella)
Dysentery
(shigella)
Granuloma Inguinale
Herpes Zoster
Pertussis
CHLORAMPHENICOL
250 mg.
Acute Undulant Fever
you know what it does...
produces rapid response
in a wide range of infectious diseases
Typhus Fever
Typhoid Fever
Urinary Tract Infections
Chloromycetin®
Chloramphenicol, Parke-Davis
Supplied in Kapseals® of 250 mg.,
and in capsules of 50 mg.
Rocky Mountain Spotted Fever
PARKE, DAVIS & COMPANY
MEDICAMENTA VERA
PD CO.

NEW

AMES DIAGNOSTIC REAGENT TABLET

BUMINTEST

for detection of albumin in urine

For office, laboratory or bedside determination of clinically significant albuminuria, *Bumintest* (Brand) Reagent Tablets have these advantages:

test is quick • noncaustic-noncorrosive

no heat required • inexpensive

reliable

A modification of the well-established sulfosalicylic acid method, the amount of albumin present is estimated by the degree of turbidity.

For the rapid and more convenient performance of basic diagnostic tests without heating or special equipment, *Bumintest* (Brand) Reagent Tablets now join

ACETEST for detection of acetone
CLINITEST for detection of urine-sugar
HEMATEST for detection of occult blood

Acetest, Bumintest, Clinitest, Hematest, Reg. Trademarks.

AMES COMPANY, INC • ELKHART, INDIANA
Ames Company of Canada, Ltd., Toronto


allergy-free day
24-hour allergic protection
Doubled Duration of Pyribenzamine relief from hay fever and other allergies may be simply initiated by simultaneous administration of one Pyribenzamine Delayed Action Tablet (50 mg.) with one regular Pyribenzamine (tripelennamine) Hydrochloride Tablet (50 mg.)
PYRIBENZAMINE
With this convenient "two-tablet regimen"—taken after breakfast and after dinner—Pyribenzamine® provides full, uninterrupted 24 hours of relief, affording an allergy-free day and a restful, allergy-free night. CIBA PHARMACEUTICAL PRODUCTS, INC., SUMMIT, N. J.
allergy-free night

LETTERS TO THE EDITORS

—Continued from page 28a

tolerate and utilize strained meats and benefit greatly from them. At the present we do not have a reprint of this paper, but it is published in the January issue of *Pediatrics*. The reference is *Pediatrics, 7*: 89 (1951).

"Dr. Irvine McQuarrie of the Department of Pediatrics, University of Minnesota, has developed a milk substitute formula prepared from strained meats supplemented with various minerals and vitamins to make a product similar in composition to cow's milk. This product can be fed to the infant who is allergic, or for some other reason cannot tolerate cow's milk. So that you may be more familiar with Dr. McQuarrie's work, we are enclosing a reprint of this paper as published in the February 1950 issue of *Pediatrics*.

"The results from other studies indicate that meat-fed babies not only have higher red blood cell counts and higher hemoglobin values, but also sleep more soundly, are more contented, and are less susceptible to infections of the respiratory and digestive tracts. These data and results have not been published, but we expect them to be published in the near future."

H. B. Lockhart, Ph.D.
Nutritionist, Research Laboratories
Swift & Company
Chicago, Ill.

REPRINT ARTICLES

"I find your reprint articles very informative and accurate. They are also a great time saver.

"They do away with the necessity of thumbing through many journals and text books to obtain a complete picture of the subject.

"Keep up the good work."

T. W., M.D.
Palo Alto, Cal.

TRUE STIMULANT THERAPY

The therapeutic efficacy and clinical safety of ACTHAR derive from the fact that it *stimulates* secretion of all three types of cortical hormones—all of vital importance in stress situations.

Quick-acting and quickly metabolized, ACTHAR is free of cumulative effects when administered in proper dosage and with proper spacing of injections. The speed of onset of therapeutic action is a significant advantage in acute conditions.

ACTHAR is the preparation of choice in those diseases requiring maintenance therapy. ACTHAR permits uninterrupted, continuous therapy without rest periods, since it functions as the true physiologic stimulus to the adrenal cortex and does not cause adrenal involution.

ESTABLISHED INDICATIONS: Rheumatoid arthritis, rheumatic fever, acute lupus erythematosus, severe asthma, drug sensitivities, contact dermatitis, most acute inflammatory diseases of the eye, acute pemphigus, exfoliative dermatitis, ulcerative colitis, acute gouty arthritis, secondary adrenal cortical hypofunction, alcoholism and acute delirium tremens, and severe burns.

Literature and directions for administration of ACTHAR, including contraindications, available on request.

ACTHAR is available in vials of 10, 15, 25 and 40 I.U. (mg.). The Armour Standard of ACTHAR is now accepted as the International Unit, 1 International Unit being equivalent to 1 milligram of ACTHAR.

ACTHAR

THE ARMOUR LABORATORIES BRAND OF ADRENOCORTICOTROPIC HORMONE (A.C.T.H.)

THE ARMOUR LABORATORIES

CHICAGO 11, ILLINOIS

PHYSIOLOGIC THERAPEUTICS THROUGH BIORESEARCH

ACTHAR

SALT HORMONES

PROTEIN HORMONES

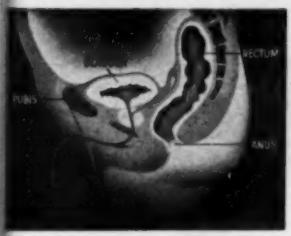
COMPOUND F HORMONES

Physiologic agents that control the mobilization and utilization of energy; regulate retention of sodium and chloride and the excretion of potassium; prevent breakdown of body protein. They inhibit cellular injury and the concurrent inflammatory reaction common in a wide variety of diseases.

NEW STRATEGY IN COMMON URINARY TRACT INFECTIONS

Pain quickly relieved, infection controlled by a combination of Sulfathalidine® and Hexylresorcinol

THALEXYL,® a new combination of two widely accepted drugs, has proved exceptionally effective for symptomatic and bacterial control of urinary infections. Treatment is based on the bacteriostatic, antiseptic and analgesic actions of the two components.



THE PERSISTENCE OF CURE

obtained with SULFATHALIDINE phthalylsulfathiazole is ascribed primarily to two factors: elimination of the source of infection from the bowel may protect the tissues of the urinary tract against recurrent infection by affording opportunity to develop natural resistance. The bacteriostatic effect of the drug on organisms of the gastrointestinal tract may also block the escape of these organisms into the urinary tract.

CLEAR, SPARKLING URINE

is usually obtained within one week after the beginning of THALEXYL therapy.

Prompt relief. When THALEXYL capsules are administered in acute and chronic urinary tract infections, pain and discomfort are quickly relieved, and the urine usually becomes clear and sparkling within one week. Results are due to double antibacterial action of SULFATHALIDINE in the lower bowel and hexylresorcinol in the urinary tract, where the latter also exerts a pronounced analgesic effect, bringing relief from vesical irritability, burning, frequency, and tenesmus. Medication should be continued for three weeks, regardless of symptomatic and bacteriologic improvement, to minimize the possibility of recurrence. Sharp & Dohme, Philadelphia 1, Pa.

write for samples and literature

Professional Service Department
Sharp & Dohme
West Point, Pa.

Gentlemen:
Kindly send me without obligation literature describing Thalexyl capsules and samples for clinical trial.

Name_____ M.D._____

Street_____

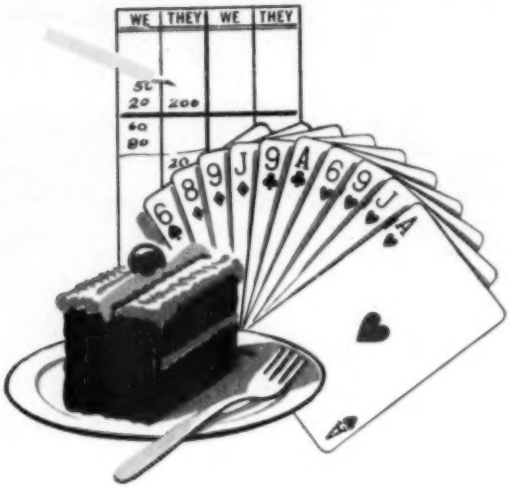
City_____ Zone_____ State_____

Thalexyl Formula:	
Sulfathalidine phthalylsulfathiazole	0.5 Gm.
Hexylresorcinol	0.1 Gm.

Supplied in bottles of 100 capsules. Thalexyl capsules are easily swallowed because of their distinctive elongated shape.

Problem Patient

fair, fat, and flatulent . . .



FLORABELLE FLUTTER'S favorite folly is flitting to brunches and bridges and teas, indulging a fancy for frilly foods that belabor the biliary system.

A second fond failing is bedevilling doctors with her fussing and fretting about flatus.

Not that Mrs. Flutter merits much attention in her own right. She just happens to be typical of an all-too-common multitude with presenting complaints of vague digestive distress and equally vague pathology. Neither sick nor well in a definitive sense, but assured in their self-diagnosis, they mend their ways with a martyr's mien — or migrate from doctor to drugstore ad lib. in their quest for a panacea.

There's no one way to handle the Florabelle Flutters with their fondness for fooling themselves. But it's said that "the commonest cause" of digestive distress in patients over forty is low grade biliary dysfunction. And such being the case, DEPANCOL will often serve an important two-fold purpose: (1) To afford prompt relief from the classic complaints — flatulence, bloating, dyspepsia, etc. — thus encouraging the patient's early cooperation in a long-range corrective program; and (2) To flush and activate the sluggish biliary system, thus encouraging restoration of normal function by physiologic means.

Depancol®

Dehydrocholic Acid	½ gr.
Bile Salts	1½ gr.
Pancreatic substance equivalent to Pancreatin U.S.P.	4½ gr.

in an enteric coated tablet

SUPPLY Bottles of 50, 500, and 5,000 enteric coated tablets, available at your druggist.

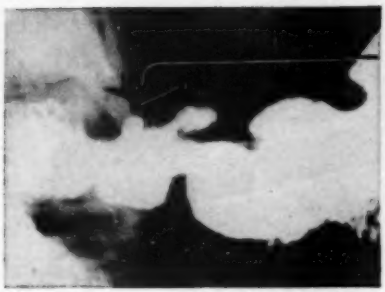
DOSAGE Average: 1 or 2 tablets 3 times daily, with or after meals.

CHILCOTT *Laboratories*

DIVISION OF The Maltine Company

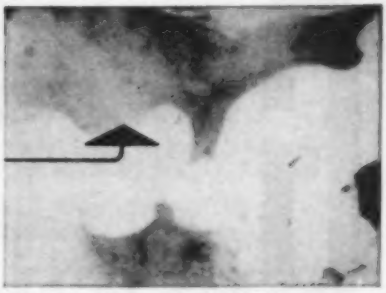
MORRIS PLAINS, NEW JERSEY

in peptic ulcer



Penetrating duodenal ulcer with constriction of mid-portion of duodenal bulb.

Same patient after 4 weeks of CHLORESIUM POWDER therapy. Note healing of ulcer and opening of bulb.



tissue repair and relief of symptoms

with

Chloresium®

Chlorophyll Powder

unique combination for superior results

- The highly concentrated, purified water-soluble chlorophyll of CHLORESIUM POWDER actively promotes healing, duplicating the outstanding results obtained in treatment of external lesions.
- The specially prepared, mucilaginous okra base clings tenaciously to the affected areas, protecting against erosion and maintaining the healing agent, chlorophyll, in truly prolonged contact with the lesion.
- Magnesium trisilicate and aluminum hydroxide give prompt, sustained antacid action without undesirable side effects.

summary The superior clinical results recently reported* were obtained without dietary, alcohol or smoking restrictions and without limitation of daily activity.

packaging: CHLORESIUM POWDER is available in cartons of 25 envelopes (25 doses).

*Offenkrantz, W. G.: Rev. Gastroenterol, *17*:359, 1950.

RYSTAN COMPANY, INC • Mount Vernon, New York

"Good to excellent results with PROTAMIDE"

. . . In 28 Cases of HERPES ZOSTER at Bethesda Naval Hospital*

William C. Marsh, Commander (MC) U.S.N., in a currently published paper[1], "Treatment of Herpes Zoster with Protamide," now available to physicians as a reprint, presents these findings:

"Thirty-one cases of herpes zoster were treated with Protamide. Good to excellent results were obtained in twenty-eight. In those failing to respond other factors besides age of patient may have been involved.

"No controls were in our study as thousands of intramuscular injections of other drugs given to patients with herpes zoster in the past, with no appreciable benefit, would adequately serve as a control.

"Pain, not merely the discomfort or itching, was the indication for treatment. Protamide (1.3 cc, the contents of one ampul) was given daily intramuscularly. No other local or systemic medications were given.

"The relief of pain was superior to that obtained when using either pituitrin, thiamine chloride, autohemotherapy, sodium iodide, or high voltage Roentgen therapy.

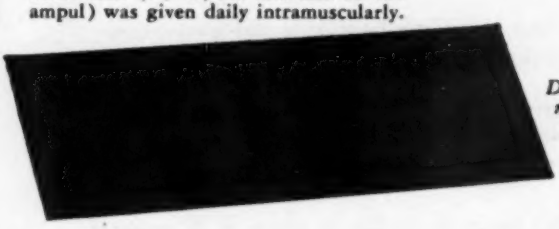
"The advantages of Protamide are the simplicity and absence of pain in administration, lack of reactions, and apparent safety.

"Costello[2] found that Protamide was effective in the relief of the posterior root pain of tabes dorsalis."

* *U. S. Naval Hospital, National Naval Medical Center, Bethesda, Maryland.*

1. U.S. Armed Forces Med. Journal, September, 1950.

2. Costello, R. T. New treatment for "lightning pains" of tabes dorsalis, Urol. and Cutan. Rev. 51: 260-263, May, 1947.



DOCTOR: Your prescription blank marked "Protamide" will bring you a compilation of papers together with folder—"FOR PROMPT RELIEF OF POSTERIOR NERVE ROOT PAIN." Send for them today.

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Ménière's Syndrome

Its Investigation and Management

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The purpose of this article is to try to dispel some misconceptions about what has been until recently a rather mysterious condition, and to show that the outlook for its victims is not so bad as it is often maintained to be. Indeed, I believe that it is not too much to say that Ménière's disease is now curable.

The Syndrome It is unfortunate that Méneière's name was attached, soon after his death, in an access of patriotic fervor, to the condition which he so carefully described and so accurately localized. The confusion which has resulted is an excellent example of the evils of eponymy. The syndrome consists of the triad of symptoms, vertigo, deafness and tinnitus, the vertigo recurring in paroxysmal form and the ears being apparently normal save for the hearing loss. The same triad of symptoms occurs as the result of an acute infection of the labyrinth, so that this triad might well be called the syndrome of the labyrinth. What distinguishes the condition which Ménière described from acute infective labyrinthitis is the feature of recurrence. Acute infective labyrinthitis occurs once, and once only—the labyrinth is destroyed by the attack and when compensation has taken place no further disturbance of balance can occur. Not so with Ménière attacks. Here the process is not an infective one, the labyrinth is not destroyed but only disturbed, and lives, increasingly battered by each attack but still functioning, to explode again from time to time. Thus it is not possible to be sure absolutely and incontrovertibly that the first labyrinthine attack is due to the disturbance which causes Ménière attacks, since it is the fact of recurrence which is the essential diagnostic characteristic of the disturbance. Only after the second attack can the diagnosis be made with certainty.

Definition We are now in a position to write a descriptive definition of Ménière's syndrome—it consists of *recurrent* attacks of acute vertigo often accompanied by vomiting and associated with impaired hearing and tinnitus, unilateral or predominantly unilateral, *in an otherwise apparently normal ear.*

I. THE INVESTIGATION

Diagnosis If the criteria contained in the above definition are strictly adhered to, a mistake in diagnosis is unlikely, for there is no other condition that mimics this one at all closely. But if laxity is allowed to creep in, if the diagnosis is made in the absence, say, of hearing loss, or in the presence of an obviously damaged ear, then will arise errors and false diagnoses. And since it

is a truism that effective treatment depends upon accurate diagnosis, then will come also disappointment to the patient and discouragement to the doctor. For it must always be remembered that there are other causes for attacks of acute vertigo than Ménière's disease.

The diagnosis can be made by simple clinical methods alone. Time spent on a careful clinical history is time well spent —for instance, many patients speak of dizziness when they mean faintness. Examinations should comprise a thorough otolaryngological, with investigation of cochlear function—but not vestibular, which will provide no information of value either to diagnosis or treatment, and often serves to initiate an attack; a neurological examination of at least cranial nerve functions with special attention to the Vth (see Diff. Diag.); and a general physical check-up. For laboratory work, a routine blood count and urinalysis suffice — these patients often have a mild hypochromic anemia. To indulge in all sorts of elaborate biochemical, electrographic and x-ray examinations, unless specifically indicated, is a waste of time and money, produces nothing, and would seem sometimes to be done for want of something more constructive, as a means of gaining temporary relief from indecision at the expense of the patient. If, at the end of it all he is told "We didn't find anything wrong", and if at the same time he is told to go home and learn to live with his attacks because there is no effective treatment, and is handed a prescription for phenobarbital to help him achieve this desirable result, it is small wonder if, casting a sorrowful glance at his depleted bank balance, and his attacks continuing, he subsides into despondency and regards the medical profession with a jaundiced eye. This attitude is not improved when, later, he discovers that there *is* an effective treatment and that what ails him can be cured.

Differential Diagnosis This should present little difficulty. Epilepsy, syncope, cerebral arteriosclerosis, abdominal diseases, coronary attacks are in most cases readily eliminated by attention to the definition and the history. There is, however, one rather uncommon condition which, for some reason not easy to understand, seems to be regarded by many as of the first importance in differential diagnosis, and that is auditory nerve neuroma, wherefore a few words about it may be in order.

Neuroma of the VIIIth nerve certainly causes unilateral deafness and tinnitus. It also produces a sensation of imbalance, but this is a more or less constant dizziness, far removed from the recurrent attacks of acute vertigo with vomiting characteristic of Ménière's syndrome. While, therefore, a neurological examination should be part of the investigation of every case of suspected Ménière's syndrome, with particular attention to the corneal reflex, change in which is the first sign of a neuroma (other than VIIIth nerve involvement) in some 90 per cent of cases, it is quite unnecessary to go into any neurological investigation unless this or some other neurological finding suggests an intracranial neoplasm. Moreover, under no circumstances should such a possibility be mooted to the patient. Small matter as a neuroma may perhaps seem to the physician, the idea of a "brain tumor" is fraught with dire foreboding to the patient. It is almost as bad to tell him that he does not have one as to tell him that he does—when the next attack of vertigo comes he wonders if the doctor was wrong and if after all he does have a tumor. I wish the doctors who so glibly talk to their patients of tumor could see some of the results of their thoughtlessness that I see.

Grouping of Cases The fact of there being more than one variety of Ménière's syndrome has been known for many years, though appreciation of the knowledge has lagged. As long ago as

1919, Lermoyez[1] pointed out that there is a type of case which possesses all the stigmata of Ménière's syndrome but in which the chronology of events is different. In the classical type, the onset of the attack is abrupt and is followed by increased deafness and tinnitus, whereas in the type described by Lermoyez under the title, "le vertige qui fait entendre", deafness and tinnitus precede the attack and are relieved by it. Moreover, though Lermoyez did not point this out, the type of vertigo is different in the two groups. In the classical group it is rotatory and usually accompanied by vomiting if the attack is at all severe, whereas in the Lermoyez group it is positional and accompanied often by nausea but seldom by vomiting[1].

In 1941[2] I showed that cases can be divided into two groups according to the degree of their response to an intradermal injection of histamine. The details of this test will be described later. The investigation brought out that the mechanism of production of attacks is a vascular one, but differs in the two groups. In the larger group which gives a small response to intradermal histamine (histamine-negative) the attack is the result of vasospasm (vasoconstrictor group), and the clinical picture is that of the classical type. In the smaller group which gives a large response to intradermal histamine (histamine-positive) the attack is the result of vasodilation (vasodilator group), and the clinical picture is that of the Lermoyez type. The validity of this observation was confirmed by the results of therapeutic test, the exhibition of a vasodilator in the vasoconstrictor group controlling attacks, as did a vascoconstrictor in the vasodilator group. If the reverse procedure was adopted, attacks could be initiated. The importance of this observation is that, because of the different mechanisms involved, the treatment appropriate to one group is inappropriate, indeed harmful, in the other. Wrong treatment may, and often does, induce attacks.

In consequence of the demonstration of these two different vascular mechanisms, two contrasting forms of treatment were adopted. The vascoconstrictor group (histamine-negative) was treated, with satisfactory results, with a vasodilator drug, the one finally selected being nicotinic acid on account not only of its vasodilator effect but because, as a vitamin, it could be given for long periods without ill effect[3]. A similar good report on the use of the same drug appeared shortly before by two other observers who had worked independently[4]. The vasodilator group was treated at first with vasoconstrictor drugs, but the pharmacological effects of these are so transient that a more satisfactory method had to be found. The method finally adopted was by histamine desensitization, and by this means excellent results were obtained[5]. The details of both methods are given later.

I have deliberately laid great emphasis upon this question of grouping because upon it depends all effective treatment. Grouping is the essence of the diagnosis. Unfortunately its importance, even the fact of the existence of more than one type of case, is still not generally recognized. This is one of the main reasons for failure of treatment to control attacks. The practitioner tends to apply the treatment with which he is most familiar, or which has been most recently, or most effectively, publicised, to every case without enquiring as to mechanism of attack or rationale of treatment, and then is surprised, and even a little annoyed, when it fails. I want to insist with all the force at my command that there is no single method of treatment which will be effective in every case of Ménière's syndrome. Unfortunately, it is not as simple as that. Each case requires careful and individual attention.

Vitamin Deficiency as the Basic Etiological Factor In attempting to discover causation in this baffling condi-

tion the first step was to determine the mechanism of the attacks. But there still remained the question, what is the factor responsible for this vascular disturbance. A lead was given by the effectiveness of nicotinic acid in the treatment of the vasoconstrictor group. Could nicotinic acid be acting not only as a vasodilator, but also as a vitamin? Thus started a long investigation.

With the help of Dr. H. D. Kruse of the Milbank Memorial Fund, a study was commenced of the tissue changes associated with chronic deficiency of the three major components of the vitamin B complex—niacin, riboflavin and thiamin—as they occur in the tongue, eyes, skin and the functional changes which occur in various systems of the body. As a result, it was found that patients with Ménière's syndrome showed signs of severe, and sometimes profound, changes of the kind associated with chronic vitamin deficiency, and that a different deficiency predominated in each group. For details, reference must be made to the original papers.[6,7,8] All that can be done here is to summarize the results.

Clinical Picture, Histamine Groups and Specific Deficiencies

The prime offenders were found to be niacin and riboflavin, thiamin playing a general supporting role only. Moreover, it was found that a specific deficiency appeared to be characteristic of a particular group, members of that group presenting predominating signs of deficiency of one particular fraction, though signs of deficiency of the other two were present in lesser degree in almost every case. Further, an explanation was found for that group of cases which gives an intermediate response to histamine skin test—they present signs of a more or less evenly balanced deficiency of both niacin and riboflavin.

1. The Histamine-Negative Group and Niacin In this group, which presents the classical picture and responds so well to treatment with nicotinic acid, the predominant deficiency was found to be of niacin, as might be expected.

2. The Histamine-Positive Group and Riboflavin In this group, presenting the clinical picture described by Lermoyez, the predominant deficiency was found to be of riboflavin.

3. The Intermediate Histamine Group Patients will often volunteer the information that they have two distinct kinds of attack, a severe attack with vomiting, a less severe attack with nausea only. It will be found that these patients come into this group and that they present signs of a more or less evenly mixed deficiency of niacin and riboflavin.

Associated Disturbances Although in Ménière's syndrome the organ most obviously involved is the ear, the vestibulo-auditory is by no means the only system in trouble. Even though between attacks some patients proclaim themselves fit as fiddles, many others have a variety of other complaints and some are very sick people. These complaints refer to various systems of the body.

Patients in the vasoconstrictor group tend to complain of abdominal disturbances, such as diarrhea, "indigestion" and "gas", of mental hebetude and confusion, especially with attacks, and they often have considerable skin pigmentation in the form of "liver spots". Compare these with the three D's (diarrhea, delirium and dermatitis) of pellagra, an accepted niacin-deficiency disease.

Patients in the vasodilator group very frequently complain of blurring of vision in attacks, of photophobia, eyestrain and visual difficulties—and one of the organs most commonly affected by riboflavin deficiency is the eye. Such symptoms clear rapidly with the exhibition of riboflavin.

Fatigue, nervousness, paresthesiae of various sorts, palpitations and tachycardia are complaints frequent in patients in all groups. They can be correlated with deficiency of the third fraction, thiamine.

Symptoms such as these indicate a general, rather than a local, disturbance. Indeed, the fact of such a general disturbance is tacitly acknowledged, in that all the present-day methods of treatment of this condition, other than surgical, are directed towards control of a general disturbance, not a local disorder. That these symptoms can all be correlated with deficiency of, and controlled by administration of, the vitamin B complex is supportive evidence of the hypothesis that Ménière's syndrome is a manifestation of nutritional disease.

II. THE MANAGEMENT

As a result of the findings of vitamin deficiency described above, I now use vitamins alone for the treatment of patients with Ménière's syndrome (except in certain cases in conjunction with histamine desensitization, for which see later), and it is this method only which I intend to describe. I do not propose to discuss the various other methods which have been advocated in recent years, either medical such as the salt-free diet with its adjuvants or the intravenous administration of histamine, or surgical. This is not from any superior attitude on my part towards them or their authors, but because (a) they seem to me to attack the problem from the wrong end, dealing with effect rather than with cause; and (b) they have proved in the past largely ineffective not only in my hands, but also in those of colleagues, if I may judge from patients referred to me on whom these treatments have already been used unsuccessfully. If my hypothesis is correct, and the more I see of the results of its application the more convinced I become that it is, then specific vitamin, and general nutritional, treatment is the correct treatment because it attacks cause, and, attacking cause, it is effective.

The Histamine Skin Test The first step is to establish the group to which the patient belongs by performing a skin test with histamine.

0.05 cc. of a 1:10,000 solution of histamine base (0.275 mg. per cc. of histamine acid phosphate) is injected intradermally into the skin of the volar surface of the forearm two inches below the bend of the elbow. This produces a white bleb which is immediately followed by the appearance of a surrounding flare of erythema.

Negative Response After five minutes the original bleb has enlarged to measure ⅜ to ½ inch in diameter and is surrounded by an area of erythema 1 to 1½ inches in diameter. After ten minutes the measurements are slightly greater. In fifteen minutes the reaction begins to fade, and in half an hour nothing is left but a small red spot marking the site of injection.

It will be remembered that this is the group characterized by rotational vertigo of abrupt onset, usually with vomiting and associated with deficiency predominantly of niacin.

Positive Response At the end of five minutes the bleb measures ½ to ¾ inch in diameter, and from the edge of the bleb will be seen one or more long trailing pseudopodia extending up the arm towards the elbow and measuring ½ to 2 inches in length. Such pseudopodia are present in five minutes, persist for twenty minutes and in half an hour are fading but are still usually visible.

This group is characterized by positional vertigo with nausea rather than vomiting and is associated with a deficiency predominantly of riboflavin.

Intermediate Response In a proportion of cases a response intermediate between negative and positive will be obtained. The size of the bleb and the area of erythema are intermediate between the

negative and positive responses (large negative) and sometimes tiny pseudopodia measuring 3/8 inch or less are present, giving a crab-like appearance (small positive). The significance of this will be discussed later.

This is the group in which attacks of both sorts occur and which is associated with a more or less even deficiency of both fractions.

This test, it must be emphasized, is not a diagnostic test for Ménière's syndrome. It is a means of grouping patients after the diagnosis has been made, of separating sheep from goats. Everybody responds to histamine injected intradermally. By using a standard amount one can determine *degree* of response. Actually what this test demonstrates is the functional state of the peripheral vascular bed. It also, by implication, provides some indication of the predominant deficiency, and in this way is of assistance to those not well versed in the tissue changes to be looked for in the chronic deficiency states.

Specific Measures Vitamin administration is by injection and by mouth. A common objection made to injection treatment is that vitamins are absorbed perfectly well from the gastrointestinal tract and that injections are therefore unnecessary. The reply is that, however true that may be under other circumstances, it is not true in patients with Ménière's syndrome. Patients who have failed to respond to vitamins by mouth have responded immediately when injections have been started. It may even be that some part of the reason for these patients' severe chronic deficiency is an inability to absorb vitamins in sufficient amount from the gastrointestinal tract, a possibility which may also account for the necessity for the exceedingly high oral dosage usually necessary to maintain control, as will be seen. However that may be, it has been found empirically that parenteral therapy gains control, and rapidly, while oral therapy usually fails. The intravenous route is the route of choice, because in the case of nicotinic acid the vasodilator effect is more pronounced, and in the case of other fractions intramuscular injection is often painful. Admittedly, intravenous therapy requires some skill, adequate veins and more effort, but it also achieves better results.

Details of Method

1. The Histamine-Negative Niacin Deficient Group The mechanism in this group being vasospasm, nicotinic acid is the substance of choice to combat the niacin deficiency because of its vasodilator action. Nicotinamide is not an effective substitute because it has no vasodilator action, though it may be used as a supplement to increase total vitamin dosage.

The method is to start with intravenous injections, and to continue with intramuscular injections (which the patient can be taught to give to himself) until control of attacks is obtained. At the same time and for long after injections have ceased, the drug is given by mouth as well in order to maintain control.

Intravenous Injections: Start with 30 mg., increase dose by 5 mg. at each injection up to the limit of tolerance, which is usually somewhere between 50 mg. and 100 mg. Limit of tolerance is shown by flush of uncomfortable degree which extends over the whole body. Give injections daily for 1 to 2 weeks, then three times a week until attacks are controlled.

Intramuscular Injections: These the patient is taught to give himself into the thigh, injecting daily the maximum amount reached intravenously, until symptoms are under control.

Oral Medication: Nicotinic acid by mouth, 50 mg. four times daily increasing to 100 mg. four times daily at the end of a week if tolerated, and continuing for many months.

Symptoms of overdose are flushes recurring frequently during the day, frontal headache, sometimes abdominal cramps.

B Complex: Because deficiency of a single fraction of the B complex never occurs alone, a high-potency capsule containing all fractions should be given four times daily together with nicotinic acid, and be continued for months or even years to prevent recurrence of symptoms. Only by long-continued high dosage can a chronic deficiency be overcome (see later).

2. The Histamine-Positive Riboflavin Deficiency Group This group presents a predominant riboflavin deficiency, and emphasis in vitamin dosage must therefore be laid on riboflavin. However, treatment with riboflavin alone requires some experience in dosage and is expensive. Usually treatment by histamine desensitization gains control effectively and rapidly and is much simpler. It should always be accompanied by oral vitamin therapy to maintain control, and the ideal method is to combine the above with intravenous vitamin therapy (see next group). But a warning, *nicotinic acid should never be used in this group;* its vasodilator effect acting on an existing vasodilator mechanism can and does initiate attacks, sometimes of great severity. If there are signs of niacin deficiency, and there invariably are, nicotin*amide* must be used for its correction, *not* nicotinic acid. This difference in physiological action between the two substances is one little appreciated either by physicians or pharmacists—pharmacologically, as concerns vitamin effect, they are interchangeable, physiologically they are not.

To desensitize to histamine (actually it is not true "desensitization" but the term has common currency), gradually increasing doses of histamine are injected subcutaneously every second day until reaction occurs. Patients can be taught to follow the schedule for themselves, gradually increasing their dosage up to the point of reaction, which is evidenced by flush and a throbbing frontal headache, both coming on within 2 minutes of giving the injection and lasting for 5 minutes or so. When reaction occurs the same dose is repeated and, if this time there is no reaction, a higher dose is tried. When reaction occurs with the second injection as well, the dose before that constitutes the maximum tolerance dose. This dose is repeated at weekly intervals for one month. The schedule of dosage is as follows:

Histamine acid phosphate, 1:10,000 (tuberculin syringe): 0.05 cc., 0.075 cc., 0.1 cc., 0.15 cc., 0.2 cc., 0.3 cc, 0.4 cc., 0.5 cc., and so on up to 1.0 cc.

Then continue with Histamine acid phosphate, 1:1000: 0.12 cc., 0.14 cc., 0.16 cc., 0.18 cc., 0.20 cc., 0.22 cc., and so on up to point of reaction.

B-Complex: At the same time a high potency capsule containing all of the B-complex factors should be given four times daily as in the previous group.

3. The Intermediate Mixed Deficiency Group Method depends upon the predominant deficiency. If the histamine response is a large negative and the attacks are mainly vasospastic in type (rotational vertigo), nicotinic acid should be used as described, but with great care as to dosage. If the vasodilator effect is considerable, nicotinamide should be substituted. At the same time riboflavin is given. If the histamine response is a small positive and the attacks are mainly vasodilator in type (positional vertigo), histamine desensitization may be used, with in addition nicotinamide *(not nicotinic acid)* to correct the niacin deficiency together with riboflavin in high dosage, or reliance may be placed on vitamin therapy alone. At the same time a B-complex capsule is given as before. The effective treatment of this mixed group is more difficult than that of the other two and demands more care and experience.

Dosage: Dosage must be high. Parenteral dosage may go as high as: nicotinic acid, 100 mg.; nicotinamide, 600 mg.; riboflavin, 25 mg.; thiamin, 100 mg. daily.

Oral dosage may be four times the parenteral dose, and must be long-continued. However, each patient is an individual experiment in titration. In general, the older the patient and the more severe and more chronic the deficiency, the more gently must he be handled, but there are great individual variations.

With regard to oral dosage, I have spoken of a high-potency B-complex capsule. By this I do not mean one of the regular commercial preparations, the quantities of the individual fractions in which are much too small for the present purpose. A prescription capsule is ordered containing quantities of each fraction appropriate to the needs of the individual as judged by his response to therapy. There is no rule of thumb, but a simple working rule—open to many exceptions—is that each capsule should contain approximately the amount of each injection, and a capsule should be taken three or four times daily.

It is apparent that this dosage is much higher than the accepted therapeutic dose for acute deficiencies, and the necessity for this high dosage is presumably because the condition is one of long-standing and severe chronic deficiency. However that may be, with lower dosage results are not adequate; with the higher dosage suggested here the attacks of vertigo can be controlled adequately and usually rapidly.

Treatment of the Acute Attack This is not usually very satisfactory and may not be feasible at all. Lie abed and wait for it to pass is usually as good advice as any. If something active must be done, the following may serve.

1. The Vasoconstrictor Group With Vomiting Obviously in such case no oral medication will be effective. An injection of nicotinic acid, if given early, will sometimes cut short an attack. Otherwise, a sedative—a barbiturate, not a morphine derivative—should be used, and of course by injection until the vomiting has ceased.

2. The Vasodilator Group Without Vomiting A drug with the trade name Mosidal (Abbott) has proved helpful in control of this type of attack, particularly when riboflavin is given in conjunction with it[9]. It is a barbituric acid derivative. Give one tablet together with riboflavin 20 mg. and repeat the same dose in one hour if necessary, then one dose every four hours until the attack ceases, if effective.

Dramamine, one of the anti-histamine group of drugs, has been advocated, and is also sometimes effective, particularly in this group, though in my experience less so than Mosidal.

General Considerations Those concerned with the management of this condition must realize, and must make their patients realize, that effective treatment is a long-term proposition. The logic of it is prevention of recurrence of attacks, that is to say control of the basic disturbance, not merely of individual attacks. The thesis is that this basic disturbance is a chronic vitamin deficiency usually of severe degree, that the attacks are the final expression of the slow build-up of this deficiency, the end of a road, not the beginning of it, and that therefore no dramatic results can be looked for as the result of treatment. The metabolic disturbance and tissue changes induced by long-standing deficiency cannot be reversed overnight. Even the results of surgery, miraculous almost as they sometimes appear superficially, are not in the long haul so wonderful. Though in successful cases—and there are some which are not—the major attacks are abolished, the deficiency remains and the patient is still a sick, if not vertiginous, person.

Patience and persistence, therefore, have to be counselled and practised. It is not unusual for as many as thirty injections to be required before attacks are fully controlled, in obstinate cases more. During this time, occasional attacks of

decreasing severity may be experienced, and the patients should be warned of this likelihood beforehand so that they do not lose confidence. In spite of these minor relapses, be patient and persist, being of course sure of diagnosis and grouping and hence of the correctness of the method adopted. Often one sees patients in whom a certain method has been tried, then an attack has occurred, so quickly another method has been adopted, and another and another, until eventually both doctor and patient are in despair. Nothing contributes more to failure than repeated change of treatment.

Persistence, then, must be the watchword, first to obtain control, then for a long time afterwards to maintain it. Even so, a mild relapse or two is not uncommon in the first year. When this occurs, a short return to injections, a booster course, will control it rapidly. Relapse is an indication of insufficient treatment, not of failure. Persist.

Dosage, both parenteral and oral, must be adequate. But I want to insist again that what is adequate is high, much higher than the generally accepted therapeutic dose, and is individual. An old teacher of mine used to say that the correct dose of any drug is that dose which will produce the effect you desire. In no condition could that dictum apply more than in this.

General Management

Diet Since this approach is based upon Ménière's syndrome as being an expression of a nutritional disturbance, attention to diet is obviously important. Every patient is asked to submit a diet record covering seven consecutive days. It is surprising how many, and what unexpected, people come back with a record showing a hopelessly unbalanced, inadequate and unsuitable diet. Except when a reducing diet is necessary—obesity and vitamin deficiency are not incompatibles—no actual diet is specified, but patients are advised to use a high-protein, high-vitamin, low-carbohydrate and low-fat diet, told what that means, and counselled as to methods of cooking in order to conserve, rather than to destroy, food values.

Rest and avoidance of undue fatigue, especially during recovery, is important. These patients are most of them not sick enough to be in hospital, but really scarcely well enough to be about.

Associated Conditions must receive attention and, unless treated, may retard or prevent control. The most frequent are: anemia — some degree of hypochromic anemia on a nutritional basis is very common; foci of infection when proven (this does not mean the indescriminate removal of teeth, tonsils, etc.); gallbladder disease, the incidence of which is much higher in this condition than the average for the population in general; and any other intercurrent disease.

Prognosis Given adequate treatment and a faithful patient, he can be assured that his attacks of vertigo can be brought under control in time, though what that time may be nobody can tell—it has been in some instances as much as several months; that tinnitus can be modified so as to be of little account in some 75 per cent of cases, and even abolished in a few; that hearing loss must be expected to be permanent, though once in a while startling improvement is obtained. At the same time many of the associated symptoms will clear up and general health and well-being be improved to a surprising degree. At the end of a year, though he may not even then be at the end of his road back, the patient will be able to look back and realize what strides he has made toward a return to health.

This is what I meant when I said at

ACKNOWLEDGEMENT

I should like to acknowledge the help which I have received in the vitamin deficiency part of this investigation from Dr. H. D. Kruse, of the Milbank Memorial Fund, and from Abbott Laboratories, Lederle Laboratories, and Winthrop-Stearns who supplied generous amounts of vitamins.

the beginning that Ménière's disease is now curable. Scars may remain, in the form of deafness and tinnitus, but the patient as a functioning organism can be made well.

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American Association on Mental Deficiency

The 75th annual meeting of the American Association on Mental Deficiency will be held at the Hotel New Yorker in New York City on May 23rd through May 26th, 1951.

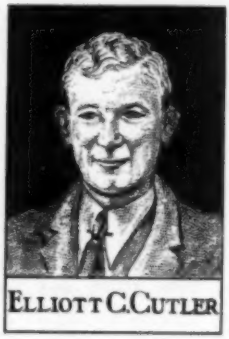
Comprised of medical, educational, psychological, and other authorities professionally concerned with mental deficiency (as well as interested laymen), the Association in convention will deal with the various aspects and problems relating to the care, treatment, and training of the mentally retarded. The latest developments and experiments in these fields will be presented.

According to estimates from the Association, the staggering total of 7% of the population of the United States is afflicted with some degree of mental retardation because of brain impairment before, during, or after birth.

Says Richard H. Hungerford, President of the American Association on Mental Deficiency, and Director of the Bureau for Children with Retarded Mental Development in the New York City Board of Education: "In the light of present day knowledge, all but a small percentage of the mentally retarded can be considered educable to some extent. Of these, most can be trained to take productive roles in our society, under varying forms of supervision. It is of considerable importance, therefore, not only to the taxpayers of the nation but to those concerned with manpower sources in a mobilized economy, that every effort be made to salvage and develop this vast human reservoir. It is our hope that the New York Convention of the American Association on Mental Deficiency will help to focus the attention of professional persons, legislators, social agencies, and, indeed, the entire nation on this long-neglected and tremendous problem of mental retardation."

Classical Quotations

● "The chief difference in the lives of physicians and surgeons is that the mistakes of the



ELLIOTT C. CUTLER

surgeon are those of commission, whereas those of the physician are those of omission."

Elliott Cutler

Proceedings of the . . . Inter-State Post Graduate Medical Ass'n of N. A., 1934, p. 40.

Endometriosis

This summarization attempts to cover the essential therapeutic information on the subject and is designed as a time-saving refresher for the busy practitioner.

Endometriosis is the only known human disease caused by the invasion of one or more tissues by a normal tissue of the same host. Other names for this condition include: ectopic endometriosis, adenomyosis, cystadenomatosis, endometrioid adenomatosis, endometrioma, adenomyoma.

Its prevalence is such that 10 to 15 per cent of all women have clinical manifestations of it at some time during their menstrual life. Exact measurement of the incidence is impossible because symptoms are variable and proof of the diagnosis requires tissue biopsy. Onset may happen with any one of the 300 to 500 menstrual periods which may occur in the lifetime of the average woman. Speert[51] has demonstrated adenomyosis in 21 per cent of 60 normal uteri removed from women 50 to 85 years old (2-35 years beyond their menopause).

History The name endometriosis was suggested by Sampson[40], whose theory of the etiology is widely applauded. Cullen[9] studied adenomyomas histologically. He related their glandular phases to endometrium rather than to cell rests of metaplasia in response to inflammation of the peritoneum. His observations support the transplantation theory. Experiments like those of Markee in the monkey provide experimental proof that normal endometrium will live outside the uterus. Markee[37] watched the bleeding of ectopic endometrium during the menses. Its onset was preceded by engorgement of vessels in the grafted tissue. Exhibition of estrin produced similar vascular changes.

The modern development of surgical technique has permitted extensive dissection within the abdomen and pelvis for removal of ectopic endometrial implants. Castration gradually received recognition as definitive therapy, whether accomplished by surgery or x-ray. The latest steps in therapy involve the use of hormones to suppress menstruation and relieve symtoms.

Perhaps the most interesting part of the history of endometriosis is speculative. Old case reports suggest that the disease had been described in all its details, long before its nature was understood. Haller[14b] cites 18 cases of menstruation from the skin. D'Andrade writes of an apparently infertile woman whose periods commenced at thirteen. At sixteen, she had cyclically recurring, menstrually related hematemesis and epistaxis. Later, she suffered menstrual bleeding from the left breast and right forearm. Microscopic examination was made of the "blood" from the breast and arm sources. Comparison with uterine menstrual discharge identified the "blood" as menstrual in all particulars. Hogg described a woman whose leg was lacerated by a broken corset stay. The wound healed but subsequently broke down at each mensis, one day before vaginal flow

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commenced. It healed again between periods. Gould[14] refers to a girl of fourteen who had five deep fissures of the lips. Prior to each mensis, these became greatly congested. Thereafter they bled freely for the duration of her period. Knaggs[14d], in 1873, operated from "ovarian disease" (possibly chocolate cysts). Following surgery, the patient had regular, painless menses. With those periods, however, the surgical wound reopened in part, and blood issued forth for the duration of the mensis. McGraw[28] had a similar case which he reported in 1855. The literature before 1900 is full of other reports which suggest the diagnosis of endometriosis involving the bladder, lung, tongue, eyes, limbs, surgical scars, etc. Details are insufficient to justify any conclusion in the majority of reports.[33b]

Origin and Spread By definition, endometriosis is the growth of normal endometrium in an abnormal site (anywhere outside the uterus). Endometrium is the normal epithelial lining of the uterus. It is never found, normally, deep to the innermost layers of myometrium. When so found, the condition is referred to as endometrial invasion of the myometrium and is variously called internal endometriosis, endometriosis uteri or adenomyosis uteri.

Theories to explain endometriosis may be considered under two headings: (a) those which postulate that the ectopic endometrium had its origin in the uterus and arrived at the abnormal site secondarily; (b) those which explain the origin of the ectopic endometrium in situ from cell rests or metaplasia. The entire female genital tract is derived from celomic epithelium. Peritoneal serosa has a like origin. Chronic irritation from inflammation or hormonal stimulation is suggested as the stimulus which produces localized transformation of peritoneum into endometrial epithelium and glands. The advocates of the embryonic rest explanation refer to the embryologic Wolffian or Mullerian ducts. Supposedly the endometrial islands of adult endometriosis arise from previously dormant remnants of those embryonic structures. Suddenly the metaplastic or activated embryonic tissue assumes characteristic hormonal responses and histological structure which makes it identical with adult endometrium. There are a number of prominent men who have supported these concepts. Some of them believe the alternative theory of migration of adult endometrium from the uterus does not explain all cases of endometriosis.

The migratory theory assumes that ectopic endometrium is derived from endometrial cells which once resided in the uterus, but which became transplanted. Cullen suggested extension of growth from within the uterus, through the tubes and into the pelvis. Sampson explained that menstrual flow may back up through the tubes and pour viable endometrial cells into the peritoneal cavity. He and others also conceived the idea that viable endometrial cells may be forced into veins and lymphatics. By those pathways, they may be transported widely. MacLeod[25] states that endometrium has been found histologically within lymphatics of the inguinal, pelvic and mesenteric lymph glands.

The migration theory can explain all cases of endometriosis. Some who criticize it maintain that it does not account for (a) deep chocolate cysts or (b) umbilical implants. Inasmuch as uterine venous and lmyphatic circulations reach all points in the pelvis and abdomen and thorax and the venous circulation of the uterus (as reviewed below) interconnects with the venous drainage of all parts of the anatomy, such criticism is not justified.

Deep-seated chocolate (Sampson) cysts may arise from lymphatic or venous carriage of endometrial cells deep into an ovary. We already know that endometrial cells have been seen microscopically in

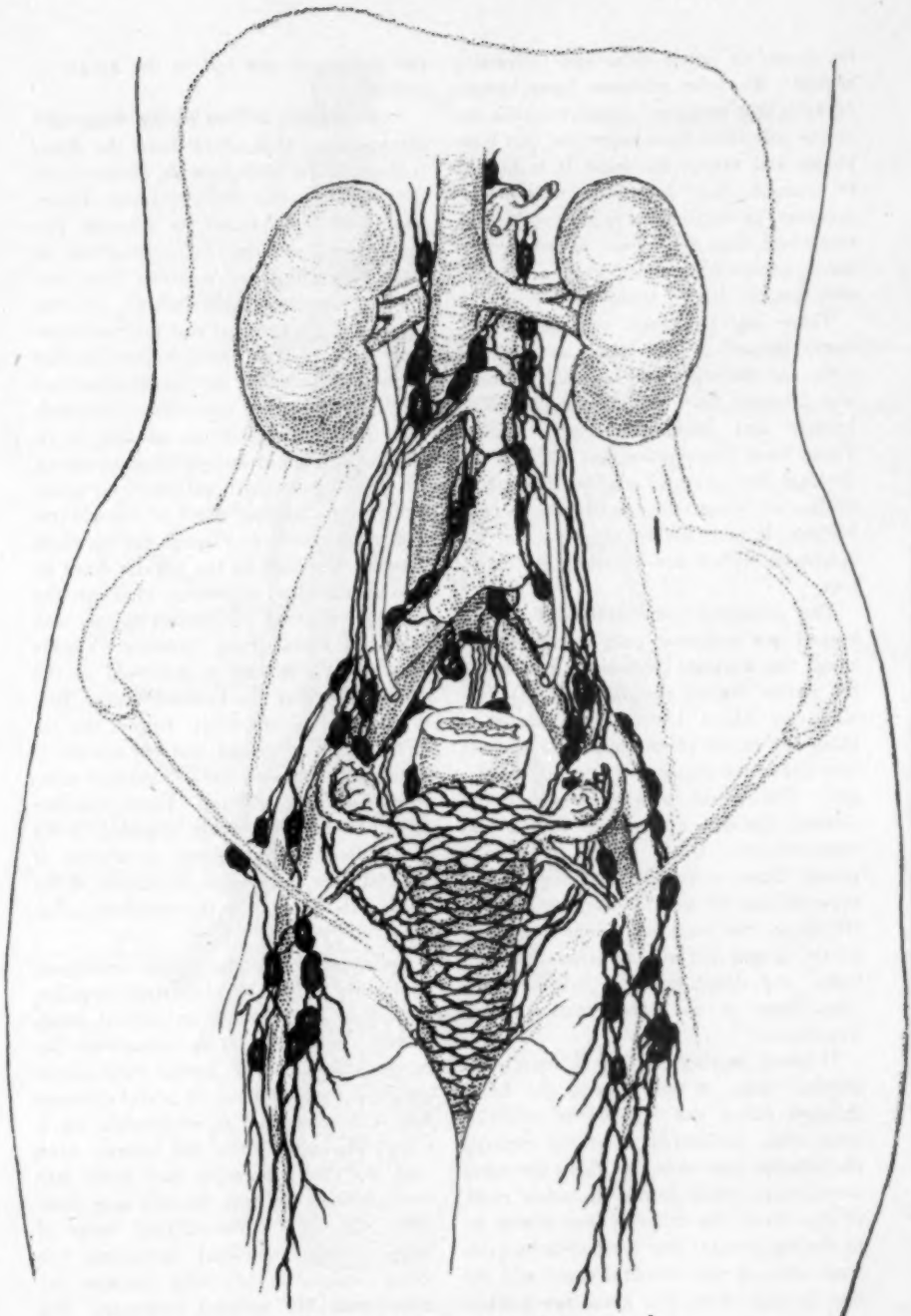

Fig. 1. Lymphatic system of the pelvis.

the lumen of pelvic veins and lymphatic vessels. We have evidence from hysterography that moderate pressure within the uterus will force radiopaque dye into lymphatic and venous channels. It is logical to assume that increased intrauterine pressure during menstruation will force menstrual fluid into those channels; the more especially because they are probably greatly dilated then.[16,19,22,32,33]

There are lymphatic connections between uterus, vagina, anus, ovaries and tubes and the superficial inguinal, external and internal iliac, sacral, common iliac, lumbar and periaortic lymph glands. These have inter-connections with all abdominal and thoracic glands. The possibilities of lymphatic spread are at once obvious. It must not be assumed that the lymphatic valves are consistently competent.

The unlimited possibilities of venous spread are apparent only to those who recall the intricate anatomical pattern of the entire venous circulation. It is possible for blood leaving the uterus to enter the pelvic plexus and then to pass into either the systemic or portal circulation. The pelvic plexus associates the rectum, bladder, uterus and vagina and communicates freely with the rectal plexus. These drain into the internal iliac, superior, middle and inferior rectal veins. Of these, the superior rectal joins the portal system but all the others are systemic and drain into the inferior vena cava. Here is one cross connection of importance.

If blood leaving the uterus enters the internal iliac, it may reach the heart through either the inferior or superior vena cava. Ordinarily it enters through the inferior vena cava, but there are cross connections which permit the other route of flow. From the common iliac it may go to the ileolumbar: this receives tributaries from veins of the vertebral canal and the four lumbar veins. The lower two lumbar veins empty into the inferior vena cava but the upper two end in the azygos or hemiazygos.

Angiographic studies of the veins have demonstrated that blood from the lower portions of the body does not always reach the heart by the shortest route. Radiopaque dye introduced by cannula into the femoral vein has been visualized on x-ray film within the common iliac, ileolumbar, lumbar, basi-vertebral, intervertebral and the external and internal vertebral plexuses. We are therefore justified in assuming that the flow might sometimes continue throughout the vertebral network. The direction and extent of flow is related to posture, deep-breathing, straining, etc. The Queckenstedt maneuver on spinal puncture is familiar proof of the alternative venous pathway through the vertebral network. Pressure on the jugular veins increases the flow of venous blood in the internal vertebral plexus and in that way increases spinal fluid pressure. Venous flow at such a time is increased in the caudal direction. To increase venous flow in the cranial direction, within the internal vertebral plexus, use any maneuver which will increase intra-abdominal pressure, such as straining. These familiar facts illustrate the highly important cross connection between venous circulation of the abdomen and venous circulation of the head and thorax, via the vertebral plexuses.

Endometrial deposits at the umbilicus, explicable on the blood-carriage hypothesis, could arrive there in several ways. Another important cross connection between systemic and portal circulations occurs at the umbilicus. In portal cirrhosis this is brought out as responsible for a Caput Medusae. Then, the inferior vena cava and its tributaries may drain into the superior vena cava through superficial veins via: (a) para-umbilical veins of Sappey (b) superficial epigastric (c) thoraco-epigastric (d) long thoracic (e) intercostals (f) internal mammary. The left branch of the portal runs from the

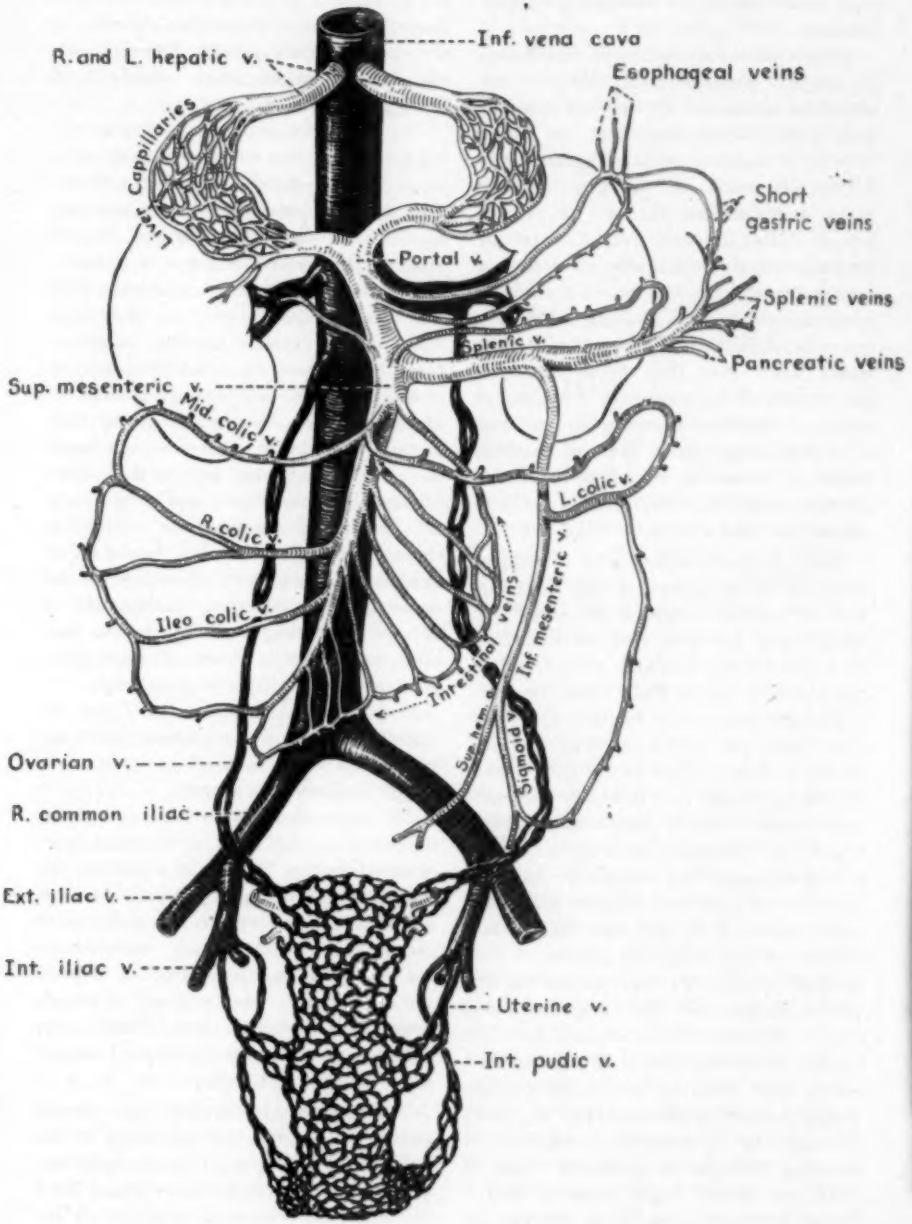

Fig. 2. Venous system of the pelvis.

liver to the umbilicus through the round ligament.

Mere anatomical facts are insufficient to explain endometriosis. Meigs[30] analyzed a series of 400 private patients with gynecological problems. He found 35% with endometriosis as against only 8.25% of public or indigent patients with endometriosis in a comparable group. His inference is that private patients menstruate too often. The more a women menstruates, the more apt she is to have endometriosis. The indigent patients have the physiologic amenorrhea of pregnancy more often than private patients. In reality, Meigs was not thinking in terms of backflow of endometrium from a menstruating uterus. He was thinking rather of hormonal stimulation effecting celomic epithelial rests; because he is an advocate of that theory.

There is experimental work to support the implantation theory, if additional support be needed. Tolson & Skitarelic[53] in rabbits and monkeys demonstrated lymphatic and venous carriage with resultant metastatic growths. Their work provides a demonstration which explains the probable origin of ectopic endometrium observed in human cases in the lung, limbs, umbilicus, thigh, etc. Hobbs[19], Markee[27] and others showed that endometrium which has artificially been removed from a normal uterus and implanted elsewhere in the same body will flourish in its new environment. It is probable that certain tissues of the body are seldom if ever invaded successfully by endometrial implants, because they offer insufficient blood supply to support endometrial tissue. The cyclic, stimulative effects of ovarian hormones were observed on endometrial implants grafted to the eye. The expected, characteristic endometrial response of bleeding recurred as predicted. Back in 1882, Sir James Paget probably had a living, human illustration of the eye experiment, occurring spontaneously and perhaps through bloodstream carriage. He wrote of a girl who suffered an effusion of blood into the anterior chamber of the eye with each mensis. Between periods, the effusion was slowly absorbed and her sight returned.[14a]

The frequent coexistence of "complicating conditions" and endometriosis deserves study. The frequently observed retroversion may be interpreted as a resultant condition, produced by adhesions. On the other hand, it may sometimes be a causative factor, making uterine drainage difficult at the menses and, by increasing intra-uterine pressure during menstrual contractions, favoring tubal lymphatic or venous backflow. The frequent occurrence of fibroids may likewise be causal with respect to increased pressure and backflow. French authors[38] believe the history of preceding abdominal and pelvic surgery (including curettage, is significant. Others have suggested that numerous pelvic examinations may be responsible for endometrial dissemination, particularly if carried out during, near the onset or soon after menstruation. They advocate postponement of elective surgery from such periods for the same reason. Tubal insufflation might force endometrial fragments into the peritoneal cavity or into lymph and venous channels.

All cases of endometriosis cannot be explained on the basis of secondary mechanical factors (pelvic examination, intercourse, surgical procedures, etc.). Ten cases have been reported in girls under twenty years of age. Clark[7] removed ectopic endometrial tissue from a virginal girl of twelve, who suffered classical, menstrually recurrent pain. There is no evidence of the usual mechanical factors in his account of this case.

Pathology In reality, one should consider separately the pathology of endometriosis of the ovary, liver, umbilicus, and each of the many other sites. There are differences between implants of the bladder[34,48,53] and those of the thigh.[46] That there is a basic pattern cannot be

denied. Microscopically the tissue consists of glands lined with a single layer of cubodial or cylindrical epithelium. The nuclei stain darkly and are centrally placed. Cytologic variations occur cyclically with hormonal changes.

Endometrial hematomata of the ovary may be a single millimeter in size or as large as several centimeters. The location may be peripheral or deep. Color depends upon age of the lesion and the stage of the menstrual cycle. The color derives from their content of altered blood, the encysted menstrual fluid. It may be thick and tarry. The cyst walls affect the color because they often become greatly thickened so that they transmit light poorly. Usually the cysts are red or black. Superficial ovarian implants are believed to arise from implantation of endometrial cells upon the traumatized surface of a recently ruptured ovarian follicle (corpus hemorrhagicum). This implantation site becomes the corpus luteum or corpus albicans and offers sufficient nourishment for successful growth and cyclic response of the ectopic endometrium so that there is intracystic menstruation month after month. This results in continued enlargement of the cyst as additional menstruum is sloughed off into the cavity. Despite thickening of the wall, these cysts sometimes rupture, spilling their collection of thick, altered blood and cells as well as fresh blood and perhaps some viable endometrium, into the peritoneal cavity. The rupture may produce clinical symptoms of an acute abdominal condition. New implants on the ovaries or elsewhere in the peritoneal cavity are likely to result. The rupture site may heal with the development of dense adhesions involving contiguous organs, including intestines. Adhesive bands between the ovary, uterus and rectum may produce retroversion from a contracting scar.

Ovarian cysts are the commonest lesion in endometriosis. Involvement of the rectovaginal septum is next most common. It is often secondary to chocolate cysts of the ovary. One finds diffuse, nodular thickening of the vaginal vault, often accompanied by fixation of the cervix. Cullen classified these lesions into four types. There are small lesions which lie free in the septum. Some occur in the midst of adhesions between the rectum and cervix. There may be additional spread into the broad ligament. The last group is that in which the involvement is so extensive as to result in a dense pelvic mass from adhesions between the broad ligaments, rectum, uterus and other structures, so their identity is lost.

Biopsy is sometimes of diagnostic importance. For example, endometrial infiltration of the colon may produce an annular constriction which so resembles carcinoma that the diagnosis is in doubt even at surgery. Again, during cystoscopy, a bladder implant may be seen. Because it may be anything from simple thickening to an orange-sized nodule, the diagnosis may depend upon microscopic evaluation. Biopsy diagnosis is reliable only when positive. Experience has demonstrated that a report on a bladder nodule of "inflammatory tissue" sometimes indicates merely that the bite of tissue was not deep enough into the lesion to show the diagnostic endometrial stroma.

There is some evidence to indicate that ectopic endometrium differs structurally from normal endometrium.[48] Whereas normal endometrium has spiral terminal arterioles, ectopic endometrium has straight arterioles. Consequently, bleeding from the two tissues is slightly different. Menstruation in normal endometrium is preceded by ischemia from contraction of the spiral arterioles. There is damage to the vessel walls in their terminal portions. Secondary vasodilatation occurs, with subsequent congestion and extravasation. In ectopic endometrium, however, the bleeding is accompanied by less tissue slough. The preliminary ischemia does not occur. Menstruation consists primarily of bleed-

ing from overcongestion. The epithelial cells are characteristic. Differentiation from endometrium removed from the uterus would be difficult because the structural differences are minor.

Symptoms Clark[7] described an eleven year-old girl with left lower quadrant pain. The complaint recurred monthly and lasted three to four days. On or near her twelfth birthday, she menstruated for the first time. The recurring bouts of pain continued, worsened, accompanied the menstrual periods and finally were relieved only by opiates. Surgical exploration demonstrated endometriosis. Removal of two masses, each over one inch in diameter, resulted in post-operative cessation of the cyclically recurring bouts of pain. This case represents uncomplicated endometriosis in its simplest form. It illustrates the basic pattern of the symptomatology.

Endometriosis is characterized by a symptom complex rather than by any one complaint. Typically, cases are not below the age of twenty, but rather between the ages of 25 and 45. Adenomyosis occurs in women from 40 to 55 or older. Menstrually related, recurring discomfort which commences one or two days premenstrually and ends or diminishes postmenstrually, is the underlying pattern of the symptoms. The severity and location depend on the duration and sites of the implants. Symptoms tend to increase with the passage of time, up to the climacteric. Pain is often low in the back (sacral) and the patient often refers to it as being "in my rectum" or "in my bladder." Dyspareunia is common. Relative sterility, acquired dysmenorrhea, menorrhagia and metrorrhagia occur but are not essential to the diagnosis. They are not rare. Pregnancy will relieve symptoms for somewhat longer than the duration of physiologic amenorrhea. Loss of weight may occur. "In extreme cases there may be cachexia simulating that occurring with advanced cancer."[36]

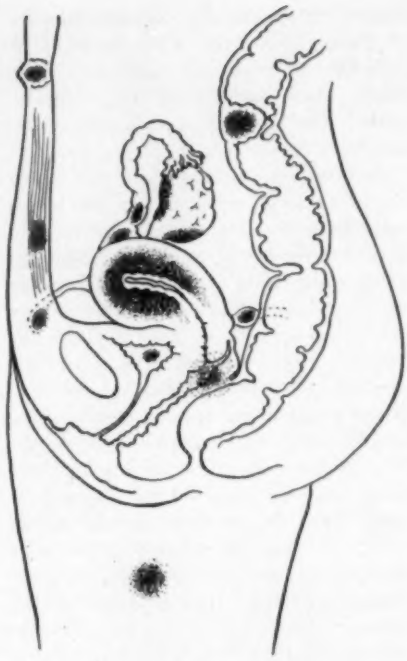

Fig. 3. Sites where endometrial implants are most commonly found. (After Brödel)

Constipation which is progressive and which is worse during the menses should be considered a signpost. It differs from the irregularly recurrent bouts of constipation produced by carcinoma of the colon only in its invariable association with the menses. In both conditions, there may be associated bouts of diarrhea. A careful history is the clue to differentiation; detailed study of the symptoms is the key.

Bladder distress which is progressive and menstrually recurrent should be considered as a signpost. Hematuria which begins during the week before the period and ends the last day of the period is characteristic of stromatous invasion of the urinary bladder by ectopic endometrium. This condition has been described in women from 18 to 48 years old. It must

be distinguished from all other causes of bladder distress, some of which occur before the menarche and after the menopause. A careful history is the clue to differentiation; detailed study of the symptoms will reveal the relationship between the bladder distress and the menstrual periods.

There are other signposts, guiding one to the interpretation of varied symptoms as being various manifestations of endometriosis. In all suspected cases, a few characteristic physical changes should be looked for. Their absence is unusual but should not be taken as a basis for excluding the diagnosis. The most characteristic change is a qualitative difference in the findings on pelvic examinations done during periods and between periods. Engorgement of normal pelvic structures at the time of the period does not produce changes of this degree. The marked alteration in findings in pelvic structures which contain endometrial implants is due to the marked swelling and engorgement of each implantation site—only during the mensis.

Vaginal study may demonstrate tenderness in all pelvic structures, but especially in the ovaries. This will be more marked menstrually and pre-menstrually. Expect to find firm, adnexal enlargements and retrodisplacement of the uterine fundus. The uterus is often irregularly enlarged and fixed. The vagina may contain nodules. These may be visible and red or purple. Rectal examination sometimes provides additional clues to the condition of the rectovaginal septum. Remember that involvement of that septum is almost as frequent as the occurrence of chocolate cysts in the ovary, but palpation of the septum is more reliable. Moreover, the finding of nodular, fixed masses in the cul-de-sac is more diagnostic than the discovery of tenderness in irregularly enlarged ovaries.

Associated conditions alter the symptoms and physical findings. Various authors describe the following as frequently associated with endometriosis: (1) fibromyomata (2) retroversion (3) tubo-ovarian abscess (4) carcinoma of the fundus (5) scars from previous surgical procedures in abdomen or pelvis.

Diagnosis Any woman between the menarche and menopause, with recurring, menstrually exacerbated pelvic or abdominal distress, should be suspected of endometriosis. Everything possible should be done to increase our index of suspicion. Some claim[55] that only 12% of surgically treated cases of endometriosis are being recognized as endometriosis prior to surgical exploration. Biopsy is advocated for extraperitoneal metastases (implants in the bladder, umbilicus, perineum, etc.).

Therapeutic testing with hormones provides a sensible method of diagnosis when suspicion of endometriosis has been aroused by proper clinical features. Roux & Doubrow[38] suggest the injection of 200-300 mg. of estrogens! Perhaps the use of testosterone is equally or more justifiable. Daily doses of oral testosterone (10 mg.) or 25-50 mg. intramuscularly only 2-3 times a week (for total intramuscular dose of 100-300 mg.) may be utilized for the test. It is well to commence right after the menstrual flow has ceased. If suppression of the next cycle is not obtained, and if symptoms are not alleviated to a definite degree, the test should be repeated before it is declared negative. Marked suppression of symptoms during the days when menstrual flow is normally expected is necessary, if a test in which menstrual suppression is achieved is to be declared positive.

Aside from the usual, careful, anamnestic inquiry, complete physical and routine laboratory tests (and the hormonal response test), there remains a radiographic investigation which may be helpful. For example, if there be symptoms of intestinal involvement, a barium enema may be helpful. In dispersed endometriosis of the peritoneal cavity, implants are

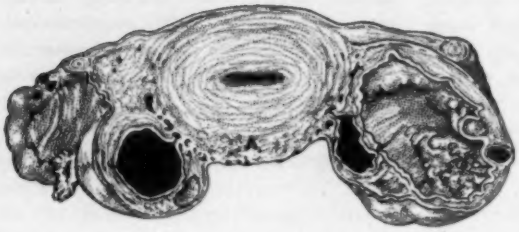

Fig. 4. Cross section of uterus and ovaries showing large endometrial cyst of right ovary, smaller endometrial lesions of left ovary and Fallopian tube. Implanted endometrial cells from adherent ovaries have grown into the uterine wall, forming superficial adenomyosis.

common on the colon or bladder (visceral peritoneum). The barium enema may not show a stricture. Note the day of the period on which the first colon study is done. Later, repeat the examination at such a time that you will end up with one study accomplished either menstrually or immediately premenstrually and the other one several days after the menstrual flow has ceased. Comparison of the films may then reveal characteristic differences in the outline of the colon or terminal ileum. The premenstrual or menstrual films will show suggestive, but not pathognomonic, evidence of relative fixation of one or possibly several segments of the bowel wall; and possibly some crowding of the lumen, but with complete preservation of the normal mucosal pattern. The charges may be so minor as to be entirely missed if the comparative study is not made. In the same way, comparative cystograms may demonstrate urinary bladder changes which are too minor to be diagnostic on a single examination.

In patients with symptoms of intestinal obstruction, the radiographic examination is helpful in localizing the affected area. Moreover, it may settle the differential diagnosis. Tenderness in an area of eccentric cicatrization which is sharply delimited, and within which the mucosa is completely normal in appearance, is very unlikely to represent carcinoma or inflammatory disease. It is inconsistent with those conditions and is consistent with endometriosis, particularly if there be abnormal, local fixation of the bowel. When this picture is found in relation to recurrent, menstrually related bowel obstruction, the diagnosis of endometrial bowel implant can be made.

Dahl-Iverson & Wandall[11] employed radiography in another way. They recommend salpingography in endometriosis, prior to surgical exploration. In this way, the patency of the tubes may be tested. If the tubes be patent, conservative surgery to preserve the reproductive function has more logic.

Goldberger et al.[13] favor hysterography as a diagnostic examination in suspected intra-uterine endometriosis (adenomyosis uteri). Using skiodan acacia, they diagnosed the condition correctly twelve times in 300 hysterograms. This was confirmed histologically after hysterectomy. They estimate that 15% of the cases of adenomyosis will be recognized in this way but the rest do not show characteristic changes. The films reveal tubular or saccular extensions of radiopaque material into the myometrium where the endometrial invasions occur. Failures or false negatives are caused by (a) growth of muscle or (b) clotted blood blocking the sacs and (c) excessive viscosity of the medium employed.

Histological study is important in confirming the diagnosis after surgical treatment of endometriosis. This is especially true in adenomyosis uteri. It is reported to occur in from 5 to 50 per cent of cases of fibromyoma of the uterus. The wide range in percentage reflects the different histological criteria for diagnosis. Spatt[50]

requires marked downgrowth of endometrium into myometrium. Another argument for histological study is set forth in the report of Arrighi & Guixa.[2] A 51-year-old patient had a left adnexal tumor attached to the uterus. Numerous intramural fibromyomata were present in the uterus; but microscopic sections of the tumor and the fibromyomata disclosed no histologic relationship. The tumor was clearly a sarcoma derived from endometrial tissue. There are three such cases on record and it is possible that they represent sarcomatous change in ectopic endometrial tissue.

Differential Diagnosis Menorrhagia as a symptom of endometriosis must be differentiated from menorrhagia produced by all other causes, some of which are: uterine fibromyomata, pelvic and vaginal inflammatory diseases, polyps, sarcoma, uterine carcinoma, ovarian neoplasms and hyperplastic endometrium.

Fever is not generally considered to be a symptom of endometriosis. Therefore it is discussed here rather than under Symptoms. Jeffcoate points out that it is a helpful sign in differential diagnosis. Normally there is a physiologic drop in body temperature with the mensis. Free blood in the peritoneal cavity, produced during menstrual bleeding by ectopic, peritoneal implants, will cause a rise in temperature just at the time when a fall is usual. Hemoperitoneum is difficult to distinguish from septic peritonitis (pain, tenderness, distension, vomiting, ileus). Which of the symptoms will occur in endometriosis depends upon the intra-abdominal sites which are involved and the extent and duration of the implants. Fever in itself, if considered for a moment, may provide the differentiation. In septic peritonitis it is likely to be above 101 F. In endometriosis it is likely to be below 101 F. and seldom above 99.5 F. When septic peritonitis can be ruled out, and the danger of delay in diagnosis has been dismissed, a therapeutic test may be considered. Pyrexia from hemoperitoneum secondary to endometriosis will abate with the administration of androgens and return upon cessation of therapy.

Chronic pelvic inflammatory disease may produce low-grade fever in the same range as endometriosis. Furthermore, the associated complaints of tenderness, etc. may be similar. Differentiation lies in the menstrually related recurrence of fever and symptoms in endometriosis and the response to androgens. A similar differentiation distinguishes endometriosis from urinary lithiasis and numerous other abdominal, pelvic and musculo-skeletal conditions in the lower abdominal area and the back. Such differentiation is possible only if the patient is seen repeatedly or a reliable history can be obtained. When, however, the patient is seen only once and is then acutely ill and a proper history cannot be obtained, the problem of differential diagnosis may be extremely difficult. An unusually skilled and thorough abdominal-pelvic-rectal examination should be done; but the patient may be totally uncooperative, even after analgesics have been administered. Sometimes, nothing short of exploratory celiotomy will provide the diagnosis.

There are even occasions when differentiation is impossible at surgery. A hemorrhagic corpus luteum cyst may be indistinguishable from an endometrial (Sampson) cyst of the ovary. The surgeon is well advised to submit the tissue to histopathologic analysis and face the chagrin of a report of "corpus luteum hematoma" rather than to find himself unable to give a satisfactory prognosis.

Treatment The aim of treatment should be relief of signs and symptoms with the least possible disturbance of normal body function. Any treatment of endometriosis may constitute a threat to the reproductive function. The patient should be spared undue mental and physical trauma and expense. The key to the relief of symptoms is the known depen-

dence of endometrial tissue upon ovarian hormones. In the absence of estrogens, endometrial tissue, inside or outside the uterus, becomes atrophic, ceases to undergo cyclic changes of engorgement and hemorrhage. Inasmuch as endometriosis owes its symptomatology to the cyclic changes induced by ovarian function, its cure may be expected from treatment which will destroy that function. Castration by radiation or surgery is the most certain therapeutic method.

Exceptions must be made to treatment by castration. It alone will not provide correction for complications due to adhesions (strictures). Castration will not be satisfactory treatment in a nulliparous young wife who wants symptomatic relief and the chance to become a mother. It is, in fact, ill-advised to produce an artificial menopause in any young woman and must be done only with her full consent (preferably in writing, witnessed by her husband), and then only if less radical methods of possible relief have already been exhausted. Fortunately such alternative modes of treatment often prove satisfactory.

Surgical intervention (whether conservative or radical) is often favored over initial treatment by radiation or hormones because it permits removal of tissue for histopathologic study and careful surgical examination of the pelvis and abdomen to determine the nature and extent of involvement.

The young woman (under 40) may be treated conservatively by saving every possible bit of ovarian tissue. Chocolate cysts are removed by dissection and cautery. Implants of the peritoneum are similarly removed wherever found. Skilful surgical technique is essential when extensive involvement is found. Surgical accidents are common[8] in such cases, due to adhesions and scarring. If the tubes be patent, subsequent pregnancy may occur when some ovarian tissue is preserved. It is quite possible that endometriosis will recur after conservative surgery. Many cases require a second operative procedure. Castration may be desirable at that time, but a second conservative procedure is often justified. A woman near her menopause may prefer to endure minor symptoms of endometriosis for a few years rather than go through an artificial climacteric. In such an individual, hysterectomy and removal of all possible implants but preservation of ovarian tissue may be the procedure of choice. Involvement of the rectum, stricture of the colon or ileum, and other disabling complications, may indicate more extensive surgery. Bowel resection is sometimes necessary.

Involvement of the bowel does not always require resection, even when some narrowing of the lumen has occurred. The radiographic evidence is sometimes sufficient to differentiate endometriosis of the bowel from carcinoma. Response to castrating doses of x-ray is frequently satisfactory without surgery.[49] Occasionally intestinal involvement is first noted at operation or there is doubt about the radiographic findings. Thereupon resection may be deemed in the patient's interest for the sake of histologic differentiation.

Other recommended treatment is hormone therapy. Androgens are not given without the hazard of masculinizing effects and acne. Total dosage of 300 to 500 mg. of testosterone propionate is given, commencing with the sixth day of the cycle. Each dose is 25-50 mg. intramuscularly, administered three times a week. Amenorrhea lasting one to three months is expected. With return of menses, symptoms may be entirely absent, decreased or unaffected. If masculinization has not occurred, the course may be repeated as indicated by the complaints and physical findings.

Oral testosterone alone, in daily doses of 10 mg.[49] has been successfully employed. Hirst[18] gives oral testosterone daily in 10 mg. dosage for three or more years. He begins, however, with intra-

muscular testosterone in oil, 150-225 mg. over a 2-3 week period. Delannoy[12] tells of using testosterone successfully for a recurrence of endometriosis following bilateral surgical castration.

Biskers[4] had 19 patients with endometriosis, to whom he gave daily doses of 5 mg. stilbesterol for 20 consecutive days of each cycle, continued for three months. He began on the fifth day of each cycle. Vaginal implants disappeared. No symptoms recurred for six months. His experience indicates that the 90 day course of therapy probably should be repeated every six to twelve months in order to keep the patients free of symptoms. The great advantage of such therapy would be the freedom from masculinizing effects.

Radiation therapy should be designed to produce temporary or permanent menolysis. Schmitz and Towne[49] had 100 per cent regression of symptoms in 17 patients who received a castration dose of radiation. Another 12 cases were treated so as to effect menolysis of three to eight months duration. All of these remained symptom free when menses recommenced. These twelve are not expected to remain "cured." The intention is to give them a few years of freedom so that when symptoms recur they will be old enough to face castration (surgically or radiotherapeutically) without too much discomfort.

Another use of radiation, sometimes successful, is for its effect directly upon endometrial nodules[55]. It is useful in recurrences after conservative surgery and for lesions inaccessible to surgery (inguinal canal, rectovaginal wall) when castration is not elected. It may be tried for lesions in the bladder, rectum and lungs.

Extent of Involvement and Complications Theoretically any tissue or organ may become the seat of an implant of ectopic endometrium. We have numerous cases to indicate the probability of blood stream carriage. Experimental evidence confirms the hypothesis. All tissues which receive blood may receive blood-borne endometrial cells. Not all tissues, however, are equally satisfactory hosts for endometrial implantation. Reports of implants outside the peritoneal cavity or surgical wounds of the abdomen are relatively uncommon and still excite medical interest as curiosities. The most frequently involved site is the ovary. Nearby tissues account for most of the remaining areas of involvement, statistically speaking: fallopian tubes, broad ligaments, round ligaments, uterus, rectum, small intestines, colon, appendix, cecum, bladder, ureters, vagina, and related parietal peritoneum. The various closure layers in abdominal surgery are frequent sites of implants. Sometimes a perineal scar becomes involved. This may be recognized by periodic, painful swelling with the menses. Schmitz[47] reported an endometrial implant in an episiotomy scar. Schlicke found an implant in the posterior aspect of the left thigh and considered it to be blood-borne.[46] There are about 70 reports of involvement of the umbilicus.[54] The usual story is of painful swelling of the navel, most severe before, during and just after the period. Vicarious menstruation from the purplish, swollen, umbilical area sometimes occurs.

Urinary bladder involvement has been recorded almost 50 times.[48, 53] Dysmenorrhea plus menstrually related urinary complaints suggest the diagnosis. Correct diagnosis is rarely made even from cystoscopic findings. In 117 cases of endometriosis, bladder involvement occurred 16 times.[48] Resection of the involved portion of the bladder may be curative. Castration is definitely curative but is not feasible in early life.

Endometrial implants on the intestines may cause obstruction. The pelvic portion of the colon is most commonly involved. Diarrhea, recurring with the menses, may be the presenting symptom. Other common symptoms (all related to the menses)

are: constipation, grossly bloody stools, distention (and other signs of obstruction) and cramping, lower abdominal pain. In a review from the Mayo Clinic,[29] the average duration of symptoms was 6.5 years before surgery in the 16 cases reported. Radiography localized the site of the lesion in nine of eleven cases studied. Relief may be obtained medically with hormones or radiation. Resection is favored when obstipation occurs or carcinoma cannot be ruled out. Surgery permits frozen section diagnosis and surgical castration.

Ectopic pregnancy may occur[23] directly as a result of endometriosis: (a) by mechanically preventing the ovum from passing into the tube or from the tube into the uterus or (b) by offering a satisfactory, extra-uterine site for implantation of the ovum. Roux and Doubrow[38] refer to the possibility of difficulties during pregnancy which may be caused by endometriosis. It may lead to uterine rupture, inertia, or hemorrhage during delivery. This refers principally to intramural endometriosis or adenomyosis.

Prognosis Following conservative surgery, from 10 to 50 per cent require a second operation. Conservative surgery is indicated for preservation of reproductive function but it must be undertaken with the full understanding that certain long-term risks are involved. Preservation of ovarian activity (especially with the uterus in situ) invites recurrence even when all implants have been completely removed. Continuation of cyclic bleeding from implants involves the risk of extensive adhesions and scarring throughout the pelvis and abdomen. Such scarification within the abdomen and pelvis may be a serious disadvantage to a woman if she later develops any one of a number of common surgical conditions. The presence of cicatrizing adhesive bands from endometriosis may transform a simple surgical procedure into a prolonged, technically difficult and hazardous operation, to be followed by an eventful, stormy recovery, or demise.

Surgical castration cannot be relied upon 100 per cent. Delannoy[12] tells of finding a walnut-sized tumor which began four months after surgery. It was periodically tender, coincident with the cyclic bleeding from the cervical stump. Testosterone effected its disappearance and cessation of the periodic spotting. Radiation castration is perhaps a little less reliable than surgery. The radiologist is not likely to err on the side of overdosage in seeking menolysis. Radiation therapy may be resumed with no inconvenience to the patient, if amenorrhea proves only temporary.

It would be desirable to state what percentage of childless mothers with endometriosis become pregnant after conservative surgery or alternative therapy. Some have normal children even after attempted surgical or radiation castration.[49] Low[24] reported on a series of 249 cases. In 90 conservative surgery cases, he found 39 had to be classified as treatment failures and 26 of these had repeated surgery. Nine of the 90 became pregnant. Beecham[3] had 80 patients whom he operated on in a period of six years. Childbearing was theoretically preserved in 32, postoperatively. Seventy-eight patients were free of complaints in a one to six year follow-up. Obviously the question about post-treatment childbearing lies buried in the difficulty of follow-up. Only 20 per cent of women with endometriosis have more than one child. The most important service of the therapist is to relieve symptoms and preserve the capacity for childbearing at least until his patient has one living offspring. There are no offspring in 75 per cent of cases.

Finally, a word of caution is appropriate with respect to the relationship between treatment of any type and even histological proof of the diagnosis. Observant surgeons discover endometrial implants, occasionally, in women who have

no symptoms of endometriosis. It can be a symptomless disease. Realizing this, we should not be too ready to explain any except the most typical cases by this diagnosis—nor to claim credit for all symptom-free intervals.

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Cancer Institute Under Construction

A $600,000 Cancer Research Institute, made possible by a grant from the National Health Institutes, is under construction at the St. Louis (Mo.) University School of Medicine.

Anterior Poliomyelitis

Treatment of Bulbar and Cervical Lesions by Intravenous Aureomycin and Amigen; Management in a General Hospital

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Organization of a Polio Service in a General Hospital In the Summer of 1949, with poliomyelitis reaching epidemic proportions in Lynn, In-Patient and Out-Patient poliomyelitis clinics were established in the Lynn Hospital, a general hospital which hitherto had not accepted cases of this disease. This was done with the aid and approval of Dr. William Green of the Harvard Poliomyelitis Commission and the Children's Hospital of Boston. Space was set aside in the Out-Patient Department where diagnostic lumbar punctures could be performed under strict isolation technic. Individual cases were referred to this clinic by physicians throughout the greater Lynn area.

When a cerebrospinal fluid showed normal white count and total protein, the referring doctor was contacted and the disposition of the patient left in his hands. When either white count or total protein was elevated, the patient was admitted to a special Poliomyelitis Service, and chlorides, sugar, gram stain, and culture of the spinal fluid were obtained. Referring physicians were notified of the disposition of the patients and encouraged to follow them in the hospital.

At first, the "service" consisted of three beds in an isolated portion of the pediatric ward; by the end of August, enough patients had been admitted to displace completely the general medical and surgical pediatric cases and fill the twenty-four-bed ward. Thereafter, the ward was given over completely to poliomyelitis until subsidence of the epidemic.

The Orthopedic Service was appointed to coordinate the Poliomyelitis Service, and staff members from various specialties volunteered their services.

Specific problems and situations were worked out as they arose. The Physiotherapy Department at the hospital was taxed with the extra duty of daily physiotherapy for all cases. Special poliomyelitis classes were given the regular ward nurses who cared for the patients. Lay "Polio Emergency Volunteers" also attended these classes and served as aides on the ward. Through the assistance of the National Foundation, extra nurses

From the Poliomyelitis Service of the Lynn Hospital, Lynn, Mass.
We thank Mr. Paul Bauer, Pres. of the Lynn Hospital; Dr. Maurice Briggs, Chief of Pediatrics; Consulting Chiefs of Services; Mr. Dan Traner, Administrator; Miss Muriel Thomas, Supt. of Nurses, for authorization to treat poliomyelitis patients in a general hospital.
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were obtained, as needed. The same organization supplied additional and specialized equipment, including bed and foot boards, woolen packs, hot pack machines, respirators, and later splints and braces.

There were no cross infections to hospital personnel or general patients.

Sixty-four patients were admitted between August first and mid-October. This is a small series, but presumably represents poliomyelitis as it might present itself to any other small city general hospital. It is the purpose of this paper to describe how these sixty-four cases were weeded out from other conditions simulating poliomyelitis, how they presented themselves to the clinician, how they were handled in a general hospital, and how they responded to oral and intravenous aureomycin.

In the diagnostic clinic, 121 lumbar punctures were done, 63 being found positive and 58 negative. Toward the end of the epidemic, only 6 out of the last 23 lumbar punctures were found positive. Of the 64 patients with positive fluids, 30 were male, 34 female. Of the latter, 2 were pregnant (4-5 mos. and 6-7 mos.). Twelve cases had known contact with poliomyelitis. There were 2 mother-daughter combinations and one brother-sister combination. There was no distinct or geographic distribution. Ages varied from 3 months to 50 years. Sixteen patients, one-fourth, developed paralysis. Six had bulbar or cervical paralysis. The hospital stay of the paralyzed patients varied from 14 to 127 days, averaged 3-5 wks.; that of the nonparalytic group varied from 3 to 30 days, averaged 11-14 days. Of the 64 cases, approximately one-half presented as the chief complaint, headache; one-quarter, fever; one-sixth, stiffness or pain in the neck, or muscle weakness; one-twelfth, backache, muscle pains, or nausea; and one patient complained of each of the following: dropping of eyelid, diarrhea, abdominal pain, and drowsiness.

Treatment The following were the routine orders on admission: The patient was placed on poliomyelitis precautions, bed rest on firm mattress, and bed board. Severely paralyzed limbs were maintained in plaster splint supports. Daily hot packs and early physiotherapy were applied to all patients. Salicylates and demerol were used for headaches and muscle spasm pain. Complete laboratory tests were ordered on blood, urine, and spinal fluids.

The above routine expresses only the general plan of treatment. Pains were taken to individualize specific needs of each patient.

Aureomycin Aureomycin, given intravenously with glucose in saline, or in glucose and water plus amigen, was used for 10 patients. Aureomycin is known to be useful in the treatment of some virus diseases (primary atypical pneumonia, lymphogranuloma venereum, psittacosis, herpes zoster, measles, etc.). It has been shown that aureomycin is found in the spinal fluid 3 to 24 hours after intravenous injection.* We hoped that amigen, with its potential protein-building amino acids might prevent cerebrospinal edema as well as maintain protein balance and possibly, by supplying protein, prevent the toxic effects of protein breakdown in the central nervous system.

Aureomycin was given for: 1. Signs of bulbar or cervical involvement (facial paralysis, upper limb paralysis, dysphagia, aphonia, etc.); 2. Persistent vomiting; 3. evidence of advancement of disease or exacerbation. Five mgm. per Kgm. body weight of aureomycin were dissolved in a solution of normal saline, in 5 per cent glucose in water or in 5 per cent glucose in saline—either 500 or 1000 cc.—and allowed to run in during a 3-4

* THE CONCENTRATION OF AUREOMYCIN IN URINE AND CEREBROSPINAL, PLEURAL AND ASCITIC FLUIDS AFTER ORAL AND INTRAVENOUS ADMINISTRATION—by Harry F. Dowling, Mark H. Lepper, Eston R. Caldwell, Jr., Richard L. Whelton, and Robert L. Brickhouse. "The Journal of Clinical Investigation" 28:983-986, September, 1949. Printed in U. S. A.

hour period daily. The daily calculated dose was given in two parts at twelve-hour intervals. The number of days of treatment varied from 1½-6 and averaged 3.

Results Before establishment of the Polio Service, four cases of bulbar poliomyelitis had been reported in Lynn in 1949. All were fatal. During the epidemic, hospitals in surrounding communities were reporting the average number of bulbar deaths regardless of the use or nonuse of respirators. We used intravenous aureomycin and amigen in only ten cases, so no positive conclusion can be drawn. However, in all cases progression of the disease stopped within 24 hours after beginning therapy, and within 72 hours definite improvement appeared; within four days all patients were eating and talking, and within six days symptoms had regressed enough so that medication was stopped. No patient needed a respirator.

Aureomycin administered orally in 12 cases increased gastrointestinal complaints (nausea, vomiting, or diarrhea) without producing appreciable change in the progression of the disease.

Case Reports The following cases received intravenous aureomycin;

1. J. L. age 12 years, bulbar poliomyelitis.
The severest kind of bulbar poliomyelitis. Presenting complaint: Nasal voice progressing to almost total aphonia. Any attempt to swallow threw the throat muscles into spasm with nuchal rigidity. She was severely toxic, listless, and apprehensive, with a temperature of 103° and a leukocytosis of 14,000.
After six days of intravenous aureomycin, glucose, saline, and amigen, she took food and drink by mouth and read in bed, but still had a strongly nasal voice. On admission, lumbar puncture: W.B.C. 14,000 (P-40 L-80); total protein 119, W.B.C. 14,000 (P-81% L-19%). Hospital stay: 23 days; days in bed: 13. At her sixth follow-up visit to the clinic, three months after discharge, there still was a slight twang in the voice, and she complained of difficulty in playing her cornet.

2. B. F.; fifteen-year-old girl; bulbar poliomyelitis.
Signs consisted of a left facial paralysis, some inability to swallow and a generalized paralysis of the lower extremities and abdominal muscles. Lumbar puncture—W.B.C. 15 (P-10 L-5). Total protein 71. W.B.C. 6900 (P-72% L-28%).
Only after having been in the hospital for 24 hours did the above complaints become manifest. She was placed on intravenous aureomycin and amigen for 3½ days by which time the dysphagia had subsided. Within the next ten days, all evidence of paralysis of the legs had disappeared. Four weeks after discharge her facial paralysis was markedly improved, and two months later it had completely disappeared. At the present time the only residual is a moderate amount of back weakness which is relieved by a supportive belt.
Number of days in hospital—23. Number of days in bed—18. Number of return visits to clinic—5.

3. R. B.; 5½-year-old boy; bulbar poliomyelitis.
Manifested a case of bulbar poliomyelitis with nasal twang to voice, dysphagia and regurgitation of fluid through his nose on attempts at swallowing. He was given intravenous aureomycin and amigen for two days by which time his regurgitation and dysphagia had subsided. Over the next week he took soft solids and fluids without difficulty and on the thirteenth day he was allowed out of bed. Four days later, he was discharged without complaints. Follow-up in clinic showed persistence of nasal twang for some eight weeks following his attack.
Number of days in the hospital—11. Number of days in bed—13. Number of times in clinic—5.

4. E. H.; eleven-year-old-girl; cervical poliomyelitis.
She showed completely flaccid right shoulder paralysis, marked nuchal rigidity, nausea, and vomiting, and was severely apprehensive. Lumber punc puncture—W.B.C. 182 (P-8 L-174). Total protein 68. ture—W.B.C. 182 (P-8 L-174). Total protein 68. W.B.C. 8900 (P-71% L-29%).
On intravenous aureomycin and amigen for four days, the nausea and vomiting, the apprehension, and the painful spasm of the neck, arm and back subsided. Her right shoulder and arm were supported by a plaster splint as an additional aid in therapy. Under routine physiotherapy and ward care, her right arm gradually improved. On the twenty-ninth hospital day, she was allowed out of bed and she was discharged on the thirty-eighth hospital day. Her clinical progress has remained satisfactory four months following the attack.
Days in hospital—38. Days in bed—29. Number of visits to clinic—7.

5. H. C.; fifty-year-old woman; cerebral poliomyelitis with psychosis.
Presented a picture of fever, headache, nuchal rigidity and severe toxicity. Admission lumbar puncture—W.B.C. 361. (P-3 L-97). Total protein 130. The second day in the hospital, she began to vomit and was placed on intravenous aureomycin and amigen which she received for 3½ days. On the sixth hospital day, she began to manifest delusions of persecution and hallucinations.
The patient was seen by the consulting psychiatrist of the Lynn Hospital. He was in accordance with our observations and advised that transferring the patient to a mental institution might be necessary. However, she was placed under mild restraints and special nursing care was continued. The mental aberrations gradually subsided over a period of four days, and she has remained well since—both mentally and physically. She was discharged one week following the subsidence of her mental changes.
Number of days in hospital—15. Number of days in bed 11. Patient was followed by her family doctor after discharge—but for two return visits to clinic.

6. B. F.; twenty-two-year-old girl; "high polio" without peripheral paralysis.
This patient was admitted lying face down with her head and neck severely retracted and with continous projectile vomiting. She complained of severe headache, nuchal rigidity and backache, and she was markedly febrile. Lumbar puncture—W.B.C. 22 (P-1 L-21). Total protein 77. W.B.C. 14,000 (P-82% L-16%).
Placed on intravenous aureomycin and amigen for 1½ days, vomiting and headache subsided, and temperature gradually returned to normal. However, two weeks later, the temperature again spiked with no apparent cause. Placed back on intravenous therapy, temperature subsided within 24 hours, and patient went on to complete recovery. She was discharged on the seventeenth hospital day and has had no recurrence of symptoms.
Number of days in the hospital—17. Number of days in bed—13. Followed by family doctor.

7. J. C.; twenty-one-year-old boy; nonparalytic poliomyelitis.

Admitted with severe headache, nuchal rigidity and unrelenting vomiting. Lumber puncture—W.B.C. 36 (P-O L-36). Total protein 68. W.B.C. 8100 (P-75 L-25).

He also demonstrated involvement of urinary bladder. On intravenous aureomycin and amigen for 2½ days, immediate complaints subsided and complete recovering gradually occurred. At the present time; five months following his attack, he has had no recurrences of his trouble although he does complain of weakness in his back which is helped by a low back support.

Days in hospital—14. Days in bed—9. Number of returns to clinic—3.

The following three cases demonstrate, we believe, the usefulness of intravenous aureomycin and amigen in the control of progression and exacerbation of peripheral poliomyelitis in the lower extremities:

1. E. B.; twenty-six-year-old woman.

A 4-5 mos. pregnant woman who was admitted with fever and a flaccid painful paralysis of the right leg from the hip to the toes. During her first four days in the hospital, the paralysis progressed to involve the musculature on the left from the hip to the knee. At this point, she was placed on intravenous aureomycin and amigen. Treatment was continued for 48 hrs. and progression of the disease was arrested. From this time on, she continued to show progressive recovery until at the time of discharge, her left leg was entirely well—but her right leg continued to show severe residual paralysis. She has since undergone a normal delivery of a normal child. Lumber puncture—W.B.C. 435 (P-369 L-66). Total protein 115. W.B.C. 10,700 (P-56% L-44%).

Number of days in hospital—46. Number of days in bed—30. Return visits to clinic—3.

2. V. W.: twenty-one-year-old girl.

Admitted with severe headache and spasm and complete paralysis of musculature from the lower chest to the toes. She also demonstrated bladder involvement. Lumber puncture—W.B.C. 381 (P-3 L-378). Total protein 42. W.B.C. 12,600 (P-62% L-37%).

After 4-5 days in the hospital, temperature gradually subsided to normal. However, some three weeks later, an acute exacerbation of fever occurred accompanied by no apparent localizing signs. She was placed on intravenous aureomycin and amigen for 2½ days. The temperature again returned to normal and drug was omitted. No progression in disease process was apparent.

3. M. S.; eight-year-old girl.

A case demonstrating severe to moderately severe paralysis of both legs and right forearm and hand. In the hospital for some four weeks spasm subsided and she was discharged on physiotherapy with residual paralysis. She was readmitted four weeks later with what appeared to be an acute exacerbation of poliomyelitis. Given intravenous aureomycin and amigen at this time over a three-day period, her complaints subsided and no evidence of progression of paralysis had occurred.

Second Admission: Number of days in the hospital—26. Number of days in bed—16. Number visits to clinic—9.

Summary and Conclusions 1) With complete cooperation and coordination of all services, the staff of a community general hospital cared for 64 cases of verified poliomyelitis from a community epidemic. With ordinary isolation precautions (zephiran hand washes, gowns, masks), there were no cross infections to hospital personnel or general patients.

2) Sixteen patients had paralysis. Aureomycin and amigen were used intravenously in ordinary dosages in 6 patients with bulbar or cervical paralysis. Improvement began immediately and was fairly complete in three to four days. There was no respiratory paralysis or death. In three patients with lower limb paralysis, progression apparently stopped forty-eight hours after the use of intravenous aureomycin and amigen.

3) Although the series is too small for conclusions, the results obviously justify further trial.

—To be continued

65 Broad Street

Prevention of Experimental Radiation Fatality with Glutathione

A single total body irradiation of mice resulted in an LD_{50} within 28 days following irradiation with 740 roentgens. However the LD_{50} was 840 and 950 roentgens, respectively, in mice receiving subcutaneously 1.6 or 4.0 mg. of glutathione per Gm. of body weight before irradiation. Writing in *Proc. Soc. Expt. Biol. Med.* [75:318 (Nov. 1950)] Chapman and Cronkite reported that in the low lethal dose range of 450 to 650 roentgens there was no evidence of protection from the administration of glutathione.

Hyperthroidism Before Puberty

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It may be the erroneous belief of some that toxic goiter is a disease of adults. Although it is true that hyperthydroidism in children is a rarity nevertheless it does occur. Usually the initiating factor of hyperthyroidism is contained within the syndrome of primary hyperthyroidism and is often more acute than that observed in adults. The exact etiology of hyperthyroidism in children, like that in adults, is not clearly understood. Predisposition plays an important part. Superimposed upon this congenital foundation an exciting cause may initiate the disease. Among these exciting causes attention is called to psychic trauma, overwork, and focal or general infections. The incidence of hyperthyroidism in children is usually based upon the number of cases in proportion to the number of adults having the disease in a given series. In the literature written on this subject the ratio varies between one and five per cent.[1,2,3] Seventy per cent of all cases of hyperthyroidism in children occur during puberty.[3] When a child approaches puberty, therefore, many symptoms may be erroneously interpreted, or discounted as insignificant. For this reason a résumé of the salient features of hyperthryoidism before puberty is not unimportant.

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Symptomatology Of the classical symptoms of hyperthyroidism the four most frequent in children are nervousness, tachycardia, exophthalmos and enlarged thyroid.

In considering nervousness, a child may be restless in bed. This type of restlessness may or may not be associated with enuresis. Hyperactivity, restlessness, and emotional instability are equivalents of nervousness. Falling out of bed, sighing and crying during sleep are other expressions of nervousness. These above-mentioned nervous symptoms with or without nervousness and irritability may be the expression of an initiating phase of hyperthyroidism in children.

Tachycardia is a constant finding in hyperthyroid children. It is rarely a subjective symptom. The heart rate varies between 90 and 180 beats per minute. There is a constantly elevated systolic blood pressure with an elevated pulse pressure.

Exophthalmos is not a common sign. When it is present it is of slight to moderate degree. It is very rarely as severe as that seen in adults with severe hyperthyroidism.

In almost all hyperthyroid children the thyroid gland although not greatly enlarged is visibly or palpably larger than normal. When an adenomatous goiter with secondary hyperthyroidism is the

basic pathology, then the gland is readily palpable.

There are certain symptoms found in hyperthyroid children which are found in adults but are somewhat altered in the younger group. For example, tremor when present closely resembles the purposeless movements of chorea. Gastro-intestinal symptoms, as nausea, vomiting, diarrhea and abdominal pain occur in about 20 per cent of children with hyperthyroidism.[2] On occasion a child may be suspected of having an acute surgical condition within the abdomen when in reality the underlying pathology is hyperthyroidism. Muscular weakness may occur. This is similar to that seen in adults with hyperthyroidism but to a lesser degree. Quadriceps femoris muscular weakness can be demonstrated by asking the child to step up on a chair, or by keeping his leg extended while sitting in a chair.

Other symptoms seen in adults are absent in children. The most important of these symptoms, hyperhidrosis, is not a prominent symptom. Another group of symptoms are found only in children. For example, growth disturbances may occur. Skeletal growth is more rapid than average in hyperthyroid children. Epiphyseal ages are accelerated, teeth develop prematurely, and a demineralization of the body and skeleton may be noted. In toxic female children ovarian function is suppressed and secondary sexual characteristics develop slowly. Menstruation is inhibited and often absent. In boys there is a retardation of sexual maturity.

Additional features of hyperthyroidism before puberty is the fact that many hyperthyroid children develop their symptoms after an infectious disease. The commonest infectious diseases are measles and pertussis. Another aspect of the clinical picture of hyperthyroidism in children is the possibility of having a patient born a cretin with a goiter and remain a cretin until hyperthyroidism develops.[1] Behavior disorders in children may be an expression of disturbed thyroid function. The proper evaluation of and a satisfactory differential diagnosis of symptoms is a most essential procedure in children.

Diagnosis and Differential Diagnosis The diagnostic tests for children are essentially the same as those for an adult. The BMR, however, is always looked upon with suspicion and doubt because of inaccuracies both technical and otherwise. In typical cases of hyperthyroidism the diagnosis is not difficult. It is the early stages of hyperthyroidism that are overlooked. Any child with an enlarged thyroid, with nervousness, or irritability, deserves a complete study as to the possibility of hyperthyroidism. Overactivity, constant tachycardia with a loss of or a failure to gain weight are symptoms demanding investigation of hyperthyroid function.

The differential diagnosis between mild rheumatic fever, mild chorea, and mild hyperthyroidism in children is most difficult. Laboratory studies are an aid but do not enable an exact diagnosis to be reached with ease. The most reliable diagnostic test is the response to iodine therapy. In order to arrive at a diagnosis of hyperthyroidism one must eliminate paroxysmal tachycardia, anemia, anxiety neurosis, malnutrition and intestinal parasites. Other conditions may simulate an enlargement of the thyroid gland. A cervical fat pad may give the false impression of thyroid enlargement. In thin children the normal thyroid because of deficiency of adipose tissue may become prominent and be mistaken for an enlarged thyroid gland. A congenital thyroglossal cyst may be misconstrued as an enlarged thyroid lobe. A cyst is small and is located above the thyroid area. There is little if any movement with deglutition; any movement when present is lateral rather than vertical.

Congenital "pop eyes" may erroneously suggest the exopthalmos of hyperthyroid-

ism. The congenital deformity usually occurs in myopia in conjunction with a shallow orbit, or an increased anteroposterior dimension of the eyeballs.

From this diagnostic review it can be appreciated that it is not easy to arrive at a proper diagnosis of early hyperthyroidism before puberty.

Treatment The introduction of the newer antithyroid drugs has resulted in a change in the management of hyperthyroidism in children. Medical management is often attempted prior to more radical therapy. In the initial stages of the disease complete physical and mental rest is necessary. All stimulants are avoided including non-alcoholic beverages which contain caffeine. In addition to these general measures propylthiouracil, etc. is administered. The antithyroid drugs are well tolerated by children. The usual precautions are taken similar to adult administration. The dose may vary between 100 and 200 mgm. daily.

There is a great tendency to spontaneous remissions of hyperthyroid symptoms in children, therefore the results of medical treatment should be guarded. Other objections to the thiourea drugs are leukopenia, agranulocytosis and their possible carcinogenic action. The hyperplasia they produce in the thyroid gland approaches malignant changes.

The hope that the antithyroid drugs would be a substitute for thyroidectomy has not materialized. When surgical treatment is decided upon, a preoperative administration of Lugol's solution, ten drops daily, with or without the antithyroid drug, is given. The Lugol's solution is usually given for three weeks prior to operation.

Although thyroidectomy does not correct the primary underlying cause of hyperthyroidism, nevertheless, it has been the accepted therapy for decades. There is disagreement as to the amount of thyroid to be removed in a child as well as to the frequency of persistent hyperthyroidism and myxedema following operation. It is believed by many that the same amount of tissue should be removed as in an adult thyroidectomy. Recurrence or myxedema is not an uncommon postoperative experience. There is no indication that the preservation of more or less of the gland would give more satisfactory results.[7] A point to mention is that there is a great tendency toward keloid formation in children following thyroidectomy.

In children psychotherapy may be as essential a regimen as it is for adults. While confined to bed the child has games, toys and books which amuse him and keep him happy. When the child becomes ambulatory and returns home excitement and crying may become a problem. The coöperation of a child psychiatrist is often as important postoperatively as the preoperative preparation for thyroidectomy.

Summary

1. Thought is given to hyperthyroidism in children before puberty.

2. The difficulties associated with proper diagnosis are recounted.

3. Accentuation is placed upon the differential diagnosis of hyperthyroidism.

4. Treatment is discussed under medical, surgical and psychiatric groupings.

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567 First Street

Research Grant Awarded

The National Foundation for Infantile Paralysis has granted $7,700 to the University of Louisville (Ky.) School of Medicine for poliomyelitis research.

Cancer Control

A Program Designed for the County Level

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In recent years, there has been a marked increase in the public's interest in cancer. It seems but a few years ago that this interest was limited to certain scientists and research groups, medical schools, practising physicians, and voluntary and official health officials. Formerly, the public heard of cancer by an announcement that a certain number of deaths had been charged to that disease for a particular community.

The knowledge about cancer has grown so that the public has become aware of the fact that it is the second cause of death in this country, for it is the rare family that has not had personal experience with the disease. Mustard states that "When, or if, a given problem of health and disease can no longer be solved by the unassisted effort of the citizen and the uncoordinated resources of the community"[1] then it becomes a public health problem. There are, of course, other diseases of adult life which are public health problems, but the demand of the public for the control of cancer now exceeds the demand for the control of any of the other conditions.

Kaiser writes: "Cancer as a public health problem is important only as the suffering of the individual is important to the community as a whole. Few diseases affect family life, in the manner cancer does—it hits the individual usually at the height of his productive period, when he has heavy family responsibilities, and disrupts family activities. The disease creates a tremendous strain on the family finances, plus a strain on the family group because of the prolonged nature of the disease. With cancer one has the problem of a sick person, needing specialized care, creating a heavy financial burden which the individual, in a large number of instances, is not able to bear himself. As a consequence, care of the cancer patient must be regarded as a community problem. As more and more people reach maturity this will become an increasingly heavy burden. The care of cancer patients is obviously a humanitarian venture. With the increasing interest of the public in the problem, it may well be that the public will assume this common responsibility as contrasted to individual responsibility for care of the cancer patient as it has done for certain other diseases (care of the insane and tuberculous) and for certain groups of the population (care of the indigent). Irrespective of the outcome in this regard, it cannot be denied that cancer is of considerable significance when viewed from a socio-economic standpoint."[2]

Nassau County began its cancer control program nearly 30 years ago. The Nassau County Medical Society advanced the need

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Table I

Cancer cases reported by site, sex and certain age groups during the ten-year period 1940-1949, inclusive; Nassau County, New York.

Primary site	Sex	All Cases	0-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65-74	75 plus
	M&F	9731	54	35	29	72	241	874	1882	2522	2455	1577
All cases	M	4534	28	18	16	32	74	277	761	1285	1256	787
	F	5197	26	17	13	40	167	597	1121	1237	1189	790
Buccal cavity and pharynx	M	366	0	0	0	1	3	31	72	110	98	51
	F	73	0	0	0	0	2	7	13	15	17	19
Digestive organs & peritoneum	M	1679	0	2	1	0	8	83	273	520	496	296
	F	1509	1	0	0	1	26	86	220	385	452	329
Respiratory System	M	626	2	1	1	1	8	33	155	215	157	53
	F	110	1	0	2	0	2	6	21	29	31	18
Uterus	F	807	0	0	0	2	32	140	223	216	131	63
Other female genital organs	F	356	1	0	1	2	15	47	114	82	64	30
	M	17	0	0	0	0	0	2	3	7	4	1
Breast	F	1320	0	0	0	3	32	207	356	293	268	161
Male genital organs	M	454	0	0	0	4	10	22	22	77	155	164
Urinary organs (male & female)	M	300	4	1	0	0	2	13	34	88	101	57
	F	129	3	0	0	1	4	4	18	31	33	35
	M	584	0	0	1	1	20	39	102	148	154	119
Skin	F	435	0	1	0	3	13	41	70	90	120	97
Brain-central nervous system	M	78	5	2	2	1	3	12	21	22	7	31
	F	58	2	2	2	8	4	15	15	6	4	0
Other & unspecified parts	M	430	17	12	11	24	20	42	79	98	64	43
	F	409	18	14	8	20	37	44	71	90	69	38

for a county hospital in 1922. A county cancer committee was organized in 1928. A tumor clinic was opened in 1933, and temporarily located at the Nassau County Tuberculosis Hospital; shortly after, money for the purchase of a small quantity of radium was secured through private subscription. Weekly tumor conferences for physicians were inaugurated in 1933 and have continued through the succeeding years. A professional nurse was added to the staff of the Nassau County Cancer Committee in 1933, and her functions were primarily to give terminal care in the home. In due time, a qualified medical consultant was selected and assumed his duties as director of the Tumor Clinic. Nassau County voters adopted a new charter in 1936 including provision for a county department of health. Meadowbrook Hospital (county owned and operated) was completed in 1937 and then the Tumor Clinic and all its equipment were transferred there and the work was augmented and improved. Coincident with the transfer, the Tumor Clinic was fully approved by the American College of Surgeons.

The Nassau County Department of Health came into being in 1938 to serve a population of just under 400,000. The preliminary census count for 1950 reveals that as of April 1, the population was in excess of 665,000, or an increase of 66 per cent during the past 10 years. This single full-time health authority replaced the previously existing 68 part-time health departments. One of the first steps taken by the department was to district the county for a generalized nursing service to be rendered by its division of public health nursing. In due time a public health nursing council came into existence which brought together all agencies which were rendering public health nursing services.

The New York State Legislature provided a valuable instrument in the furtherance of cancer control. A law was enacted during the 1939 session which required the notification, by physicians and hospitals, of "cancer and other malignant tumors". This law was enacted in ac-

Read before the annual meeting of the Public Health Cancer Association of America at St. Louis, Missouri, October 30, 1950.

cordance with the recommendations of the Legislative Cancer Survey Commission, which included in its membership three physicians, one of whom was the state health commissioner.

In its report the Commission had stressed the need for making use of the experience of all physicians who diagnose, treat or care for cancer patients in gathering data concerning the disease. It was the opinion of the Commission that complete and adequate reporting would provide important information regarding cancer, which otherwise could not be obtained. Some of the data which could be obtained over a period of years, included:

1. How much cancer is there in the community?
2. How much real increase in cancer is occurring?
3. Is early diagnosis improving; to what extent is the cancer educational program proving effective in this respect?
4. Is early diagnosis improving more in areas where there is a great deal of cancer education?

The process of reporting is a simple one. The physician or hospital submits the report to the district health officer for unorganized areas or to the city or county health commissioner on New York State Department of Health Form No. C.C.1. This form is then sent to the state health department after office record has been made on Form C.C.10. These records, of course, are confidential. The law does not require the reporting of cancer in New York City.

Cancer control in Nassau County is a cooperative project with the Nassau County Medical Society, the Nassau County Cancer Committee, the Tumor Clinic and Nassau County Department of Health participating. In the following pages we shall summarize some of the data that have been gathered during the past 10 years, as well as outline the program which has been in effect, and some of its accomplishments.

When the law became effective, the first move was to set up a register of reported cases. As stated above, office record is made on Form C.C. 10. This form includes space for recording the tissue examination report, or reports, in addition to the usual statistical data about the patient, the date of onset, first visit to a physician and other information.

A second and very important step was the working out of a plan to integrate nursing care of cancer patients in all existing nursing services. This plan included intensive theoretical instruction, practical experience in the Tumor Clinic, and the gradual transfer of the case load to the public health nurses—after consultation with the nurse employed by the Cancer Committee.

The medical consultant of the Tumor Clinic assumed responsibility for developing a series of 19 lectures, for which he secured as speakers qualified specialists in the county and in the adjoining area. The last four lectures of the series dealt with "Cancer and the Community," and included the presentation of social service

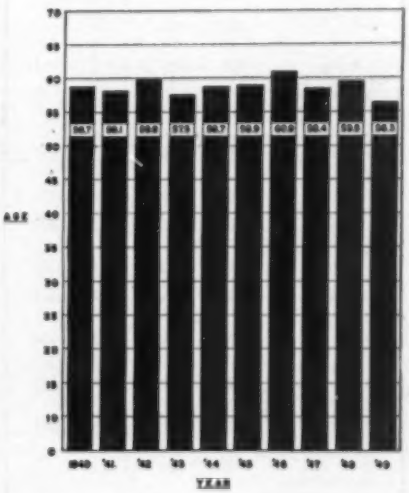

Figure 1. Average age at onset of cancer cases reported in Nassau County—by years—1940-1949.

problems with emphasis on the part the public health nurse can play in helping to solve these problems in families of patients enrolled at the Tumor Clinic. The popular education program of the Cancer Committee, the handling of the cancer patient, and the problems of cancer care as seen by the Committee's public health nurse, were also discussed. The concluding lecture, given by the physician who had organized both the Cancer Committee and the Tumor Clinic, outlined what might be expected in the form of tangible returns from a concentrated effort to control this disease.[3]

The practical experience program was outlined by the superintendent of nurses of Meadowbrook Hospital, the director of the health department's division of public health nursing and the Cancer Committee's public health nurse. This included eight days of planned observation and practice in the Tumor Clinic, observation of x-ray and radium therapy and ward rounds with the medical consultant to observe treatment and special care.

Table 2

Number of cancer cases reported for two five-year periods, 1940-1944, and 1945-1949, Nassau County, New York.

Primary site	1940-1944	1945-1949	Percent Increase or Decrease	Total
All cases	4423	5308	+20.0	9731
Cancer of the buccal cavity and pharynx	221	218	— 1.4	439
Cancer of the digestive organs and peritoneum	1403	1776	+26.6	3179
Cancer of the respiratory system	290	446	+53.8	736
Cancer of the uterus	416	391	— 6.0	807
Cancer of other female genital organs	180	176	— 2.2	356
Cancer of the breast	632	705	+11.6	1337
Cancer of the male genital organs	218	236	+ 8.3	454
Cancer of the urinary organs (male & female)	199	230	+15.6	429
Cancer of the skin (except vulva & scrotum)	432	587	+35.9	1019
Cancer of the brain and other parts of c. n. s.	47	89	+89.4	136
Cancer of other and unspecified parts	385	454	+17.9	839

The generalized service includes nursing care and demonstration in the home, and education of the patient, and members of his family, in his own hygiene and the value of examination. Cancer nursing, therefore, is a part of the basic family health work. Whenever a case of cancer is reported to the health department, the services of a public health nurse are offered to the reporting physician. More than 100 of the county's physicians utilized that service during 1949.

Since many new public health nurses had been added to the staffs of the department of health and the several visiting nurse organizations, the series of lectures was repeated during February through May of 1948.

Education has been an important function of each of the cooperating agencies. One of the first—and it has been a continuing activity—is the Cancer Committee's lay education program, beginning with high school age. The Cancer Committee through its educational director assigns physicians to talk before high school classes or assemblies, civic groups and other types of organizations. The department of health, in addition to rendering actual service to cancer patients, is active in the education of the laity through its medical personnel and public health nurses, radio broadcasts and the preparation of special articles for release to the press. The Nassau County Medical Society sponsors postgraduate courses for its members and, each year, one of its meetings is devoted to a discussion of cancer.

Two years ago a member of the board of directors of the Cancer Committee wrote a playlet—"In a House Down the Street"—concerning cancer which is both entertaining and educational. The Woman's Auxiliary to the Nassau County Medical Society supplies the characters for

the presentation of the playlet. In fact there are two casts for this purpose. As the play ends, a physician enters to meet the "doctor" member in the play and immediately a question is asked of the physician concerning cancer. This opens a question and answer period which has extended from 30 minutes to an hour.

During the 10-year period 1940-1949 a total of 9,731 cases of cancer was reported among Nassau County residents. The most frequent site attacked was the digestive organs and peritoneum, followed in order by the breast, skin, uterus, respiratory system, male genital organs, buccal cavity and pharynx, and urinary organs. (Table 1).

By years, reported cases range from a low of 774 (rate of 166.2 per 100,000) during 1943, to a high of 1,234 (rate 235.0) during 1947. A total of 1,133 cases was registered in 1940 which included a backlog of cases diagnosed and under medical care before reporting was required, effective January 1, 1940. The year 1940 also established the all-time high rate of 278.5.

During the 5 years, 1940-1944, registered cases numbered 4,423. During the past 5 years, 1945-1949, the total of reported cases was 5,308 or a 20 per cent increase over the first 5-year period. A decrease was recorded during the past 5 years for three sites, namely: (1) uterus, (6.0%), (2) cancer of other female genital organs (2.2%) and buccal cavity and pharynx (1.4%). Percentage increases for other sites ranged from 8.3 for male genital organs to a high of 89.4 for cancer of the brain and central nervous system. The total number of reported cases of cancer of the brain and central nervous system for 10 years was very small—136. A more than 50 per cent increase was recorded for cancer of the respiratory system. (Table 2).

Each year the date of first symptom of the malignancy is secured on an average of 88 of each 100 cases. The average age of onset for 8,523 of the 9,731 reported cases was 58.6 years. The high of 60.9 years was recorded for 1946. The low of 56.3 was reported during 1949. (Figure I).

Reported cases among females exceeded those among males beginning shortly before 15 years of age and then dropped under the total for males be-

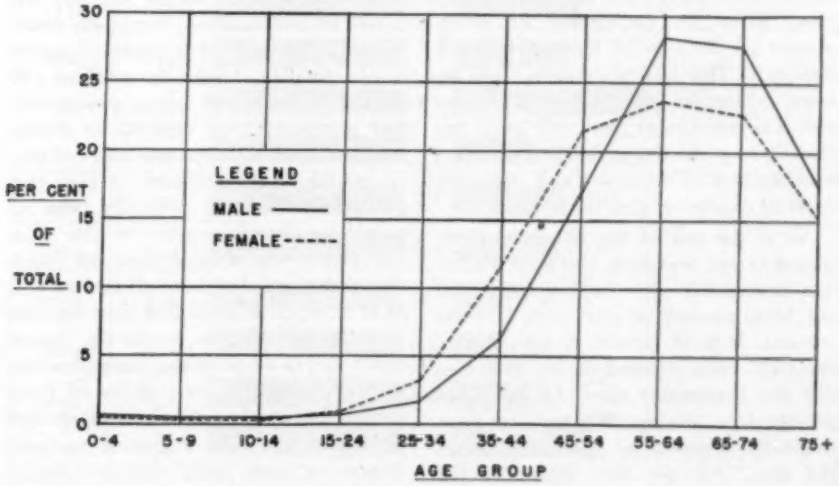

Figure II. Percentage distribution by sex of 9,731 cancer cases reported in Nassau County—1940-1949.

tween 45 and 64 years of age. (Figure II.)

A biopsy done promptly and expertly can mean the difference between life and death for those who have cancer. Seven of each 10 case records recorded during the first year of reporting were accompanied by reports of tissue examination. For the 10 years, approximately 6.8 of each 10 cases reported had had tissue examination by a pathologist. During the past three years there has been an increase in tissue examinations and for the past year 75 of each 100 case reports were accompanied by laboratory reports. During most of the 10 years Nassau County had only two laboratories which operated under approval of the New York State Department of Health. Since these clinical laboratories operated as a part of the service of two hospitals their work was necessarily limited to service to the hospital patients; otherwise practicing physicians utilized the services of the Division of Laboratories and Research of the New York State Department of Health, especially of the Branch Laboratory in New York City. On August 1, 1949, Nassau County made laboratory service available to the practicing physicians when the department of health opened its Division of Laboratories and Research. This laboratory service will be more convenient for Nassau physicians and it is anticipated there will be a further increase in the proportion of tissue examinations of diagnosed and suspected cases of cancer (Figure III.)

As of the end of the 10 years of required cancer reporting, 1 of each 4 cases was presumably alive in that notice had not been received of the death of these persons. It is of interest to note that of the 1,133 cases reported during 1940 that 339 are presumably alive. Of the 2,544 presumed to be alive, 29.6 per cent were originally reported as having cancer of the skin, 18.0 per cent cancer of the breast, 11.2 per cent cancer of the uterus,

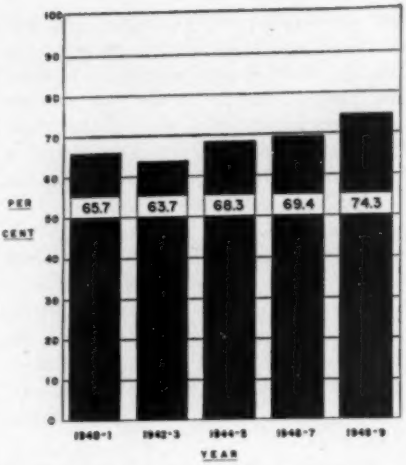

Figure III. Percentage of reported cancer cases in Nassau County confirmed by microscopic examination—by 2 year periods—1940-1949.

and 4.5 per cent cancer of the lip; other sites totalled 36.7 per cent. Every death certificate of a Nassau County resident is checked against the cancer register and if the name is found in the register, and if mention of cancer is not included on the certificate, contact is then made with the physician who signed the certificate to make certain that cancer was not the cause or contributory cause at death. During 1948 and 1949 reported cancer deaths totalled 1,480. In addition, 46 other deaths occurred among persons who had previously been reported as having cancer but mention was not made of cancer on the death certificate. A high proportion of these had originally been reported as having cancer of the skin. Information was secured from the physician that a cure had been effected as well as in other cases which had been reported with the primary site as the lip, breast, cervix and in an occasional case some site of the digestive organs. Many of these persons had reached an advanced age and death was generally attributed to heart disease or some other chronic ailment. (Figure IV.)

During the first 11 months in which cancer notification was required, 215 physicians reported 590 cases. The remaining total of 590 cases was reported from the Tumor Clinic or a hospital. Last year 205 physicians reported 513 cases.

During 1948, the Cancer Committee sponsored 43 lectures including a moving picture on cancer, with a total attendance of 3,222. Lectures by physicians during 1949 numbered 38 with 3,847 in attendance. Eighty-three meetings were addressed by physicians, with a total attendance of 7,069. Last year, the playlet "In a House Down the Street" was given over a local radio station, in addition to its presentation before six different groups.

The public health nurse has a vital function in any cancer control program. It is the public health nurse who makes a call at the home in answer to a telephone call or written request for various types of information concerning cancer. Her principal function in this is to urge the person who makes the inquiry to consult the family physician. During the several years of operation of the Nassau County Department of Health a considerable number of persons have consulted their family physician in accordance with a recommendation made by a public health nurse representing the official or a voluntary agency in the county.

One of the activities of the Woman's Field Army of the Nassau County Cancer Committee is the making of dressings which are distributed to needy cases. These dressings are either secured by the public health nurse from the Cancer Committee or the nurse informs the patient or patient's family that such dressings are available upon request.

The total number of cases admitted to nursing service and the number of visits to those cases during the three-year period indicate, in our opinion, a satisfactory coverage of public health nursing in relation to known cases of cancer. It is readily seen that certain sites of cancer require a greater proportion of nursing time, such

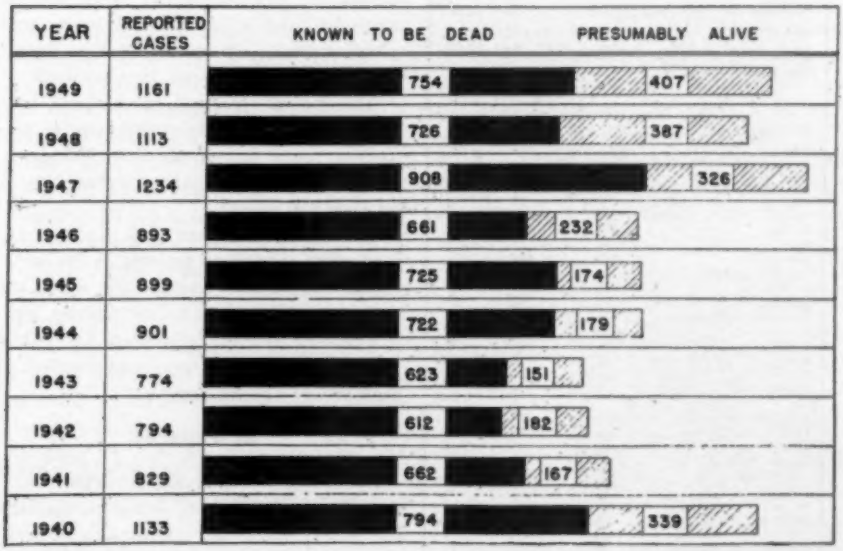

Figure IV. Reported cancer cases in Nassau County—number known to be dead and number presumably alive—by years—1940-1949.

as the digestive tract and the breast. The amount of actual nursing care needed by a person suffering with cancer of the digestive tract has decreased immeasurably with modern advances in medical science. Many patients leaving certain hospitals following a colostomy have already been taught to care for themselves, thus reducing the amount of actual nursing care to be given by the public health nurse. Her most important contribution in a case of this type is to teach the patient or some member of the family what should be included in the diet, how it should be prepared and how it can be included as a part of the family's total food budget (Table 3.)

Nursing care in breast cancer is largely concerned with muscle reeducation and the emotional and social adjustment to an amputation or subsequent healing of the wound.

Due to the nature of skin cancer, many of the cases are diagnosed and brought to treatment at a very early time so that the need for the services of the public health nurse is not as great.

The data contained in Table 3 indicate the site of the lesions where public health nursing service is most likely to be needed. They give some insight into the load that can be expected in a population of nearly three quarter million persons.

Table 3

Number of reported cases of cancer; number of cases visited by public health nurses and total visits during 1947-1948-1949, Nassau County, N. Y.

Primary site	Reported cases 1947-1948-1949	Nursing visits No. of cases	Nursing visits No. of visits
TOTAL	3514	1067	9897
Buccal cavity & pharynx	141	83	370
Vagina	5	13	86
Vulva	7	11	77
Breast	431	146	1272
Penis	6	2	3
Skin	412	106	401
Thyroid gland	11	2	4
Esophagus	56	12	51
Rectum and anus	226	65	1299
Larynx	35	8	32
Cervix	154	62	330
Prostate	125	19	198
Bladder	103	28	276
Nasal cavity sinus	5	18	69
Digestive organs	903	245	2902
Other respiratory	266	46	551
Uterus	92	49	142
Other female genitalia	109	18	274
Kidney	46	7	46
Brain	65	11	92
Adrenal gland	1	3	13
Bone	24	33	275
Hodgkin's disease	50	7	55
Leukemia	87	11	65
Other and unspecified	152	62	414

Summary

A report of group action in cancer control has been summarized for an urban county with a population as of now in excess of 665,000. Certain statistical data taken from 9,731 reports of cancer cases have been reviewed.

The average age at onset for 8,523 cases (both sexes) was the lowest in 1949—56.3 years—for any one of the 10 years since cancer reporting has been required in New York State.

Of the 2,544 reported cases presumed to be alive, nearly two-thirds had cancer of the skin, breast, lip or uterus.

A slight decrease in registered cases of cancer of the uterus, of other female genitalia, and of the buccal cavity and pharynx and a sharp increase in cancer of the respiratory system have occured.

For the 10 years, diagnosis was confirmed by microscopic examination of suspected tissue in 68 of each 100 cases. During 1949, this number increased to 75 of each 100 cases.

Public health nurses give nursing care and other services to patients in the home. Certain of the data indicate the site of the lesions where public health nursing service is most likely to be needed. The public health nurse has an important function in any cancer control program.

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Nassau County Court House

Hemorrhoids

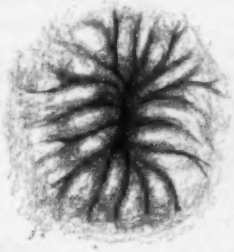
(External)

External hemorrhoids are outside the Pectinate (anorectal) Line and are covered by integument. Three varieties are distinguishable.

Fig. 1. The integumentary type. (skin tab)

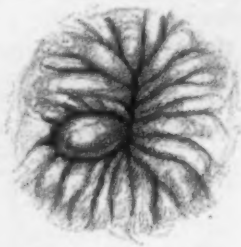
Symptom: In some cases itching.

Fig. 2. The varicose type.



Symptom: In some cases itching.

Fig. 3. The thrombotic type.



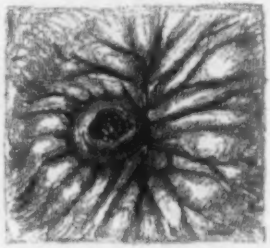
Symptom: Extreme pain.

The integumentary variety consists of thickened sacs (generally the result of old thrombotic hemorrhoids, which have undergone absorption (Figure 1).

The varicose type is due to dilation of the external hemorrhoidal plexus and it manifests itself as a round purplish mass at the anal orifice when the plexus is distended by venous stasis produced by straining. When straining stops the distention disappears and the varicose hemorrhoids appear only as hypertrophic skin causing deep folds at the anal orifice (Figure 2).

The external thrombotic hemorrhoid or perianal hematoma appears as a livid, extremely tender ovoid swelling beneath the smooth shining skin on one side of the anus (Figure 3). This condition appears suddenly when one of the varicosities ruptures and the escaping blood produces a clot within the walls of the vessel or in the surrounding tissues. The size of the clot varies from ¼ inch to one inch in diameter. If this condition is untreated the smaller masses may undergo organization and the result is the above mentioned skin tab. Untreated larger masses may develop ulceration with bleeding (dark colored discharge), which is not connected with bowel movements. The blood clot may be discharged through the eroded skin and healing may result by granulation or the erosion may lead to ulceration and abscess formation (Figure 4).

Fig. 4. Ulcerated thrombosed hemorrhoid



The material constituting this Department is prepared by Dr. Bernard J. Ficarra, Surgery Editor of Medical Times, and Dr. Edward Singer.

Treatment of the integumentary and varicose types.

Integumentary (skin tabs) and varicose types of external hemorrhoids require only conservative treatment.

a. cleanliness (soap and water cleansing after each bowel movement)

b. avoidance of harsh foods (bran, whole wheat bread, seeds)

c. oil laxatives to keep bowels lubricated.

If the itching, however, becomes an annoying symptom these types of hemorrhoids can be excised.

Operation The patient is placed in lateral Sims' position with one leg extended, the other flexed, and the arm, which is on the table, is placed back of the body. The operation is performed under local anesthesia and the hemorrhoids are cut off with blunt point curved scissors, as shown in figures 5, 6, and 7.

If there is bleeding it should be controlled by crushing the bleeding points with a hemostat, as ligatures might cause infection. Hemostasis can also be secured by gentle pressure on the wound. The wound is not sutured. As dressing a pad moistened with saturated boric acid solution is applied and held in position by a T bandage. The pad is covered with waxed paper to prevent escape of moisture.

Avoid injection of external hemorrhoids with sclerosing solutions, which always cause excruciating pain and ulceration.

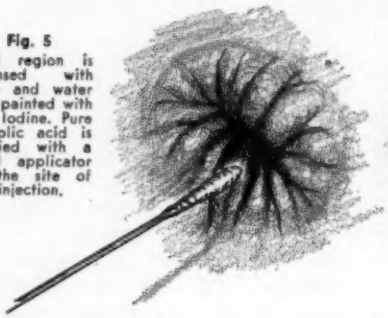


Fig. 5
Anal region is cleansed with soap and water and painted with Tct. Iodine. Pure carbolic acid is applied with a small applicator on the site of the injection.

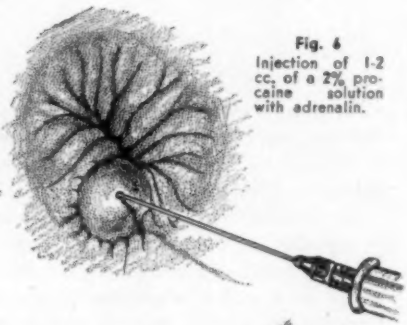
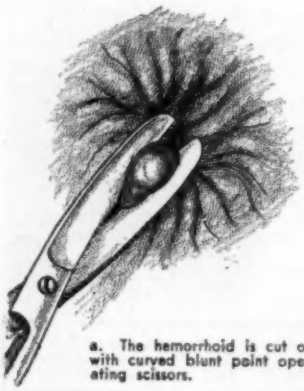
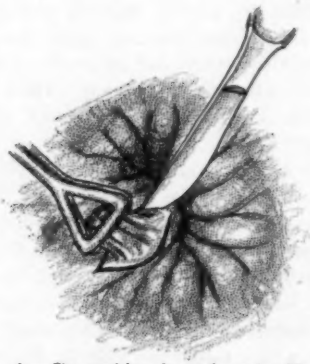


Fig. 6
Injection of 1-2 cc. of a 2% procaine solution with adrenalin.

Figure 7



a. The hemorrhoid is cut off with curved blunt point operating scissors.



b. The excision is performed with the use of a scalpel making an elliptical incision radially to the anal orifice.

Postoperative treatment Two sitz baths daily are prescribed to control pain and swelling in addition to the measures recommended in conservative treatment. The wound heals in 6-8 days.

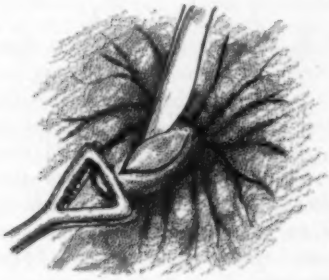
Treatment of thrombosed hemorrhoids The smaller external thrombosed hemorrhoids usually respond favorably to bed rest and hot sitz baths within two days by diminution of the edema and the blood clot.

Larger thrombosed hemorrhoids require surgical treatment.

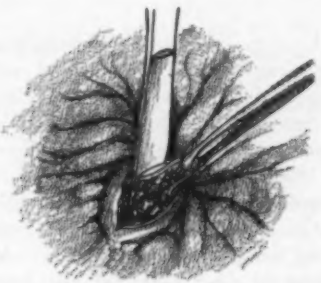
Operation The patient is placed in Sims' position as described above. The anal region is cleansed with soap and water and painted with iodine. Pure carbolic acid solution is applied to the most protruding part of the hemorrhoid and 1-2 cc. of a 2% procaine solution with adrenalin is injected through the carbolized area into the skin (Figs. 5 and 6).

Several minutes waiting are required until the anesthetic takes full effect after which one can proceed with the incision (Fig. 8).

Figure 8



a. The thrombotic hemorrhoid is grasped with a hemostat or Allis forceps and is put under tension by pulling it away from the anal opening, and an elliptical incision is made and most of the overlying skin is removed.



b. The skin flap is picked up with a forceps and the incision is carried downward to excise the underlying thrombosed vein. This procedure permits the retraction of the cut ends of the vein into the tissues and reduces bleeding.

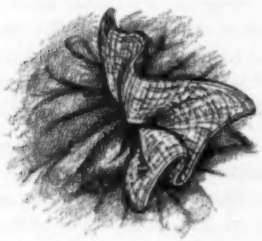


Fig. 9. A gauze compress is inserted into the wound.

Hemostasis is accomplished by crushing of the bleeding points or by gentle pressure as described above.

The wound is not sutured but allowed to heal by granulation.

A compress (Fig. 9) and a T bandage are applied.

After treatment The same procedure is followed as described in the treatment of skin tabs. Healing takes place within 7-10 days.

Warning In extensive thrombosis and when a combination of internal and external hemorrhoids is thrombosed, the treatment should be conservative, consisting of strict bed rest, diet, compresses and oil laxative lubrication until all symptoms disappear, which takes usually three weeks, as surgical intervention is dangerous in the acute stage.

Chest X-Ray

A Report by a Joint Commitee of the American College of Chest Physicians and the American College of Radiology

A joint committee representing the American College of Radiology and the American College of Chest Physicians met in San Francisco, June 26, 1950, and prepared the following report. On December 4, 1950, the report was approved by the Board of Regents of the American College of Chest Physicians, meeting in Cleveland, Ohio, and on February 7, 1951, by the Board of Chancellors of the American College of Radiology, meeting in Chicago, Illinois.

It is hoped that this report of two organizations concerned with mass chest x-ray surveys and routine chest x-ray examinations in general hospitals will clarify any controversial problems regarding these procedures. It is also hoped that the broad principles upon which this report has been formulated may serve as a basis for solving any local situations which may arise concerning mass chest x-ray programs or routine chest x-ray in general hospitals.

Murray Kornfeld*
William C. Stronach**

Purpose of Joint Committee on Chest X-Ray The purpose in having a Joint Committee on Chest X-ray is that two professional organizations, who have common interests, may exchange ideas and formulate unified thinking on the problems involved in routine chest x-rays in hospitals (general, mental, etc.), and mass chest x-ray programs. In addition to this the Committee, after considerable discussion, agreed to another point, namely; that each physician should be encouraged to have a chest x-ray on all of his patients.

Limits of Survey For purposes of this discussion routine chest survey examinations should be defined as those examinations of the chest which are conducted on microfilm apparatus for screening normal persons from those patients with abnormal changes in the chest. The examinations are screening and are not to be considered as diagnostic procedures. Screening method is for the purpose of detecting the presence or absence of a lesion but should not be utilized for identifying the nature of the pathological process.

The 14x17" film is fundamentally a

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diagnostic tool and its use, therefore, makes the examination more than a screening procedure. Survey chest x-rays, either in hospitals or in general population, are approved as a screening device if conducted by agencies which utilize well qualified professional technical staffs and which make a sincere effort to send the positive individuals to qualified local physicians or clinics for proper follow-up. The methods of conducting these were discussed at length. These included surveys by the U. S. Public Health Service, etc. Dr. Newell reported on the San Francisco County Medical Society's plan, whereby the medical society is responsible for the surveys but the project is financed through the local tuberculosis association.

Interpretation and Report Interpretation and reporting of medical findings is a medical matter and should bear the signature or identification of the responsible physician.

Method of Reporting Method of reporting of chest survey studies: This is a local mater and is by prearranged agreement between the employer and the employee in industrial surveys; in other surveys is in accord with medical ethics, according to local agreement.

Type of Reporting Type of reporting: The Committee discourages the reporting of suspicious cases as tuberculosis. It believes this to be a clinical diagnosis. The x-ray interpreter should designate the cases that require immediate follow-up as "urgent". The small film x-ray interpretation is merely an impression.

It should be emphasized that the 14x17" film is a diagnostic aid and the results derived therefrom are also impressions and not diagnoses. Even the larger film is but one of several examinations necessary in order to establish correct diagnoses.

Professional Compensation The professional cost of performing routine chest examinations in hospitals: The Joint Committee believes the radiologist and/or chest physician should be compensated just as any other physician practicing his profession. The procedure is time consuming and places a definite responsibility on the radiologist or chest physician. The Committee likewise felt that in this matter the basic principle of payment is by arrangement between the physician and the hospital or agency involved. In the reading of follow-up films there should also be an individual limit to the number of films which should be read in any one day by one physician and which he should not exceed. The compensation, of course, would have to take into consideration whether the physician not only reads the film but also makes the film.

Clothing of Patients Whether or not a screening examination can be conducted with the patient fully clothed: Since the number of lesions overlooked because of clothing (2 per cent) is considerably smaller than the normal variations of interpretation Chamberlin et al. have demonstrated to exist in the reading of photofluorographic films, it was concluded that the examination of clothed persons was as effective a procedure as examination of the undressed persons. Since examination of the fully clothed persons is an easier procedure as compared with the examination of the undressed persons, the Committee agreed that screening examination can be conducted with the patient fully clothed.

Readers' Qualifications Qualifications of readers in mass chest surveys: It was believed at the present time there was no practical method which could be used to evaluate the qualifications of a particular reader. Studies in this respect are being made at the present time. It is hoped that within a short period of time satisfactory testing methods will be available. The Committee therefore agreed to leave this matter open for further discussion.

Conclusion The two Committees agreed that the bi-committee arrangement should continue and that another meeting be arranged in at least one year. In an effort to have the committees act continuously and without interruption, interim ideas should be sent to the respective chairmen and an exchange of opinions should continue during the meeting interval.

Therapeutic Results With Penicillin in Neurosyphilis

Various types of neurosyphilis were treated in 639 patients, 430 of whom were observed for 1 to 5 years after treatment, 31 died, 81 were re-treated elsewhere, and 97 were lost to follow-up or were observed for less than 9 months. The treatment consisted of a total of 4,000,000 units of penicillin given in doses of 40,000 units intramuscularly every 3 hours for 12½ days. Of the total followed 221 had received penicillin alone and 209 had received penicillin combined with fever therapy induced by tertian malaria.

The Kahn tests became negative over a period of years. Among the patients observed for 4 to 5 years 41.3 per cent of the group receiving penicillin alone became negative as compared with 38.7 per cent of the group receiving combined treatment. Among the patients with paresis and taboparesis Kahn negativity was obtained in 22.7 per cent and 40 per cent, respectively. The clinical results, evaluated on the basis of the ability of the patient to continue his pretreatment occupation, were excellent in meningovascular neurosyphilis. Among those with tabes dorsalis 16 to 19 given penicillin and 12 or 13 given combined treatment were able to work. In the group with paresis and taboparesis 17 of 20 given penicillin and 12 or 24 given penicillin plus malaria were able to work. The poorer results in the latter case was attributed by Curtis, Kruse, and Norton in *Am. J. Syph. Gonor. Ven. Dis.* [*34*:554(Nov. 1950)] to the fact that often those patients with the most severe involvement were given the combined treatment. Among the 31 deaths 16 were caused directly or contributarily by syphilis.

The authors concluded that penicillin alone is probably adequate for all types of neurosyphilis with the possible exception of severe paresis and primary optic atrophy.

Ascorbic Acid in Healing of Corneal Ulcers

A group of 50 patients with corneal ulcers were studied as to the effect of ascorbic acid on the healing of the ulcers. About half the group (28) received no ascorbic acid in addition to the content in their regular diet. This was apparently sufficient for normal purposes since none of the patients showed signs of scurvy. The other 22 patients received daily massive doses of 1.5 Gm. of ascorbic acid. Reporting in *Brit. Med. J.* [*No. 4689:* 1145 (Nov. 18, 1950)] Boyd and Campbell stated that the additional ascorbic acid had no effect upon the rate of healing of superficial ulcers but that the healing rate of deep ulcers was increased from an average of 6.15 days in 13 cases receiving no additional ascorbic acid to 4.36 days in the treated group of 11 cases.

The degree of healing was ascertained by determining the intensity of fluorescence after instillation of sodium fluorescein. The authors suggested that there may be a localized area around the site of regenerating collagen where the ascorbic acid level falls below the optimum for rapid healing unless the blood level is raised by the administration of large doses of ascorbic acid.

Privileged Communication

A Brief Analysis of the Doctrine Existing Between Physician and Patient

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The relation between a physician and his patient is a vital and intimate one. It rests on the highest good faith. In order to foster the mutual trust and confidence involved in this relationship, the state, as a matter of public policy, has extended to it the principle of privileged communication.

Under the old common law confidences between a doctor and his patient were not privileged. Thus, if a patient revealed certain confidential information to his physician, the latter was obliged to disclose it, if asked to do so on the witness stand. Under certain conditions this rule still prevails but, as a result of changes by statute, the physician is not allowed to disclose communications from a patient or give information concerning him, when such information is acquired professionally.[1]

Before proceeding to a more detailed examination of the principle of privileged communication as it relates to physician and patient, it may be well to survey briefly the field as a whole. To the general rule of law that no confidential statements are exempt from disclosure on the witness stand, there are four distinct exceptions:

1. Confidences transmitted between husband and wife during marriage: Communications between husband and wife during marriage were privileged at common law, and have also been exempted by statute. "A husband or wife shall not be compelled or without consent of the other if living, be allowed to disclose a confidential communication made by one to the other during marriage." This is provided for by Section 349 of the Civil Practice Act of New York.

2. Confidences transmitted by a client to his attorney in the course of professional employment and advice given pursuant unto: Confidences exchanged between attorney and client were privileged at common law, and have also been made so by statute. Section 353 of the Civil Practice Act of New York provides that "an attorney or counselor at law shall not be allowed to disclose a communication made by his client to him, or his advice given thereon in the course of his professional employment, nor shall any clerk, stenographer or other person employed by such attorney or counselor be allowed to disclose any such communication or advice given thereon."

3. Confidences transmitted to a clergyman or other minister of religion in the course of discipline required by the tenets of religion: the rule privileging clergymen not to disclose confessions is purely statutory. Section 351 of the Civil Prac-

tice Act of New York provides that "a clergyman, or other minister of any religion, shall not be allowed to disclose a confession made to him, in his professional character, in the course of discipline, enjoyed by the rules or practice of the religious body to which he belongs."

4. Communications transmitted by a patient to his physician in the course of professional treatment.[2] Under the common law communications between physician and patient were not privileged. However, they have been made so by statute. New York took the lead in this movement. In 1828 the New York Legislature passed a statute establishing the doctrine of privileged communication between physician and patient.[3] Since then, this statute has been broadened in scope, and modified to meet changing conditions. In 1904 nurses were included under the law. In 1905, the statute was amended to exclude from the rule a patient under the age of sixteen, who had been the victim or subject of a crime. In such a case, the physician or nurse might be required to testify fully, in relation to the matter. The present day Section 352 of the New York Civil Practice Act is a far cry from the Revised Statutes of 1828. This section, which deals with communications transmitted by a patient, reads as follows: "A person duly authorized to practice physic or surgery, or a professional or registered nurse, shall not be allowed to disclose any information which he or she acquired in attending a patient in a professional capacity, and which was necessary to enable him or her to act in that capacity; unless, where the patient is a child under the age of sixteen, the information so acquired indicates that the patient has been the victim or subject of a crime, in which case, the physician or nurse may be required to testify fully in relation thereto, upon any examination, trial or other proceeding in which the commission of such crime is a subject or inquiry." The legislatures of other states have followed the lead of New York in making communications, between physician and patient, privileged material.[4]

Four fundamental conditions may be predicated as necessary to the establishment of a privilege against the disclosure of communications between persons standing in a given relation: (a) The communications must originate with the understanding that they will not be disclosed; (b) this element of confidence must be essential to the full and satisfactory maintenance of the relation between the parties; (c) the relation must be one which, in the opinion of the community, ought to be sedulously fostered; and (d) the injury that would inure to the relation, by the disclosure of the communication, must be greater than the benefit thereby gained for the correct disposal of the litigation. A privilege should be recognized only when these four conditions are present. Accordingly, the rule of privileged communications does not affect the general competency of any witness, but merely renders him incompetent to testify to certain particular matters.[5]

Professor Wigmore, an eminent legal authority, seemed averse to privileged communication between physician and patient. Indeed, one of his too ardent followers asserted that statutes privileging communications between physicians and patients were a blot upon the law and should be repealed.[6]

Some of Professor Wigmore's reasons for opposing the principle of privileged communication between physician and patient are: "the communication between a doctor and a patient does not originate in a confidence." As he puts it: "Barring the facts of venereal disease and criminal abortion, there is hardly a fact in the categories of pathology in which the patient attempts to preserve any real secrecy."

Professor Wigmore also contends that the inviolability of that confidence is not vital to the due attainment of the purposes

of the relation of physician and patient. According to him, "Even where the disclosure is actually confidential, it would none the less be made, though no privilege existed. People would not be deterred from seeking medical help because of the possibility of disclosure in court. If they would, then how did they fare in the generations before the privilege came?" However, as to whether the relation of physician and patient must be one which in the opinion of the community ought to be sedulously fostered, he answers in the affirmative.

On the question whether the expected injury to the relation through disclosure is greater than the expected benefit to justice, Professor Wigmore says, "that the injury to the relation is greater than the injury to justice . . . . . must most emphatically be denied . . . . . Of the kinds of ailments that are commonly claimed as the subject of the privilege, there is seldom an instance where it is not ludicrous to suggest that the party cared, at the time, to preserve the knowledge of it from any person but the physician. From asthma to broken ribs, from ague to tetanus, the facts of the disease are not only disclosable without shame, but are, in fact, publicly known and knowable by everyone—except appointed investigators of truth . . . . . Upon such a foundation of vain imaginations is the privilege reared. The injury to justice by the repression of the facts of corporal injury and disease is a hundred fold greater, than an injury, which might be done by disclosure. And furthermore, the few topics—such as venereal disease and abortion—upon which secrecy might be desired by the patient come into litigation ordinarily in such issues (as when they constitute cause for a bill of divorce or a charge of crime) that for these very facts, common sense and common justice demand that the desire for secrecy shall not be listened to."

Professor Wigmore then goes on to say, "There is but one form in which the argument for the privilege can be put with any semblance of plausibility, and in that form it doubtless commonly presents itself to the view of medical men jealous of their profession. This argument is, that since the secrets of the legal profession are allowed to be inviolable, the secrets of the medical profession have at least an equal title to consideration."[7]

It is not my purpose to confute such distinguished learning, but only to point out a few reasons supporting the doctrine of privileged communication between physician and patient. In this connection, a few leading cases interpreting the statute will be enlightening.

Judge Miller in Edington v. Mutual Life Insurance Company,[8] said, "To open the door to the disclosure of secrets revealed on the sick, or when consulting a physician, would destroy confidence between the physician and the patient, and, it is easy to see, might tend to prevent the advantages and benefits which flow from this confidential relationship."

In the action against a fraternal association for payment of an insurance contract defended upon the ground of a breach of warranty,[9] Judge O'Brien said, "This Court has held that the statements of the attending physician, for the purpose of establishing the cause of death, either of the insured himself, or of his ancestor or, their descendants, although not parties nor beneficiaries under the contract, were not admissible. They are excluded, not only for the purpose of protecting parties from the disclosure of information imparted in the confidence that must necessarily exist between physician and patient, but on grounds of public policy as well. The disclosure by a physician, whether voluntary or involuntary, of the secrets acquired by him while attending upon a patient in his professional capacity, naturally shocks our sense of decency and propriety, and is one reason why the law forbids it."

In the action on a life insurance policy, Judge Danforth held, that the statute prohibiting a physician from disclosing any information which he acquired in attending a patient, in a professional capacity, and, which was necessary to enable him to prescribe, (2 R.S., 406, a 73; C.C.P.a 834; now C.P.A., a 352), includes information received through the sense of sight, as well as that communicated through the ear. It is not necessary that the examination of a patient be private, to exclude information so derived; nor is it required that it be shown in the first instance by formal proof, that the information was necessary to enable the physician to prescribe. Moreover, the statute includes all knowledge acquired from the patient himself, from the statements of others surrounding him, and from observation of his appearance and symptoms.[10]

It was held, in an action upon a life insurance policy, that information as to the condition of the insured, acquired by a physician while attending him, and which was necessary to enable the physician to prescribe, is prohibited from being disclosed. The physician is incompetent as a witness to testify thereto.[11] It was also held, in a negligence action against a railroad corporation, due to neglect of the railroad's agent, for injuries incurred by plaintiff, that confidences revealed to a practicing physician after the injury was received, was privileged.[12]

An examination of the facts in a testamentary action against an executrix reveals that it was held by Earl J. that where a physician attending a patient requests another physician to attend with him, for consultation, in regard to the condition of the patient, and he does so attend, he is brought within section 834 of the Code of Civil Procedure (now section 352 of the Civil Practice Act), prohibiting a physician from disclosing information acquired in attending a patient in a professional capacity, necessary to enable him to act in that capacity. Furthermore, this provision is not limited to a prohibition of disclosures by a physician, of information that is of a confidential nature, but applies to all information obtained by him from his patient, while attending in a professional capacity, which was necessary to enable him to act.[13]

Although statutes have generally made confidences exchanged between a physician and his patient privileged, it was held in Simonsen v. Swenson, 177 N.W. 831, 104 Neb. 224, that a physician who, in good faith and with reasonable grounds, decides upon confidential information given by his patient that he has a contagious disease, is not liable for such disclosure to others as will prevent the spread of the disease.[14] In the case of Sovereign Camp of Woodmen of the World v. Grandon, 89 N.W. 448, 64 Neb. 39, it was held that the calling of a physician to attend a patient was not a privileged communication.[15]

Thus the principle of privileged communication between the physician and patient has become an accepted one today. The chief reason for this is that this doctrine is grounded in public policy. The state has come to recognize the fact that the principle is to the best interest of the medical profession, the patient, and the people at large. And so, the state has extended medical extraterritoriality to physician and patient—protecting both in the course of consultation, examination and treatment.

Like the sanctuary afforded to fugitives by the medieval church, the principle of privileged communication acts as an enveloping cloak for confidences revealed by a patient to his physician.

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11. Dilleber v. Home Life Insurance Company 69 N.Y. 256. (1877).
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Preparation and Stability of Sulfonamide Injections

All of the common sulfonamides, sulfacetamide, sulfadiazine, sulfamerazine, sulfamethazine, sulfapyridine, and sulfathiazole, are sensitive to light when a solution is made of the sodium salt in water. In direct sunlight such solutions rapidly darken in the presence of oxygen but the rate of darkening is reduced in diffused light or in the dark. With the exception of sulfacetamide and sulfathiazole, the replacement of the air with nitrogen in ampuls filled with injectable solutions of the sulfonamides prevented the development of discoloration even when stored in direct sunlight for a period of one month. The same situation held when the ampuls were stored in diffused light or in the dark for a period up to one year. A slight darkening in color was observed in all air-filled ampuls immediately after sterilizing in the autoclave at 115° C. for 30 minutes.

Whittet, writing in *Pharm. J.* [*165*:309 (Nov. 11, 1950)], studied further injections of sulfacetamide and sulfathiazole. He found that nitrogen filling of ampuls retarded but did not prevent the darkening of these solutions. Sodium metabisulfite in a concentration of 0.5 per cent prevented the discoloration of sulfacetamide for about one year in diffused light but had no retarding effect in direct sunlight. He, therefore, suggested that there may be a two-fold cause for discoloration of sulfacetamide, and possibly for sulfathiazole, one due to oxidation and the other to direct action of sunlight.

The development of discoloration in sulfonamide solutions apparently does not increase the toxicity nor reduce the therapeutic activity to any appreciable degree. A study of the solubility of sulfathiazole sodium showed that it was not possible to make a solution of more than 25 per cent w/w at 15.5°C. and only 20 per cent w/w at room temperature. He thus suggested that the B.P.C. and the U.S.P. XIV solubility figures were incorrect. The crystals deposited from a 30 per cent solution of sodium sulfathiazole after autoclaving were found to be the original salt and not a decomposition product.

Amebicidal Action of Antibiotics

Amebicidal activity against *Endamoeba histolytica* in vitro was established for polymyxin B, D, and E (PB, PD, and PE), aureomycin (A), and circulin (C). The concentrations, in mg. per cc., which inhibited a 0.5 cc. portion of a suspension of *E. histolytica* for 24 hours were listed by Watt and VandeGrift in *J. Lab. Clin. Med.* [*36*:741 (Nov. 1950)] as follows: PB, 0.18-0.22; A, 0.22-0.25; PE, 0.5-0.55; PD, 2-2.5; and C, 2.25-2.5. A slight resistance to A developed but none to PB or PE.

Six patients were given 1 to 2 Gm. of aureomycin daily. Stool specimens became negative for *E. histolytica* by culture and by microscopic examination after 3 days (5 to 6 Gm. of aureomycin), and remained negative for the 20 to 25 days of testing.

EDITORIALS

Pioneer Doctor

A few months ago *The Daily Oklahoman* published an interview with Doctor Walter Hardy, M. D., F.A.C.S., a practitioner who 54 years ago rode horseback into Ardmore (Oklahoma) to begin his life's work as general practitioner and surgeon. The gist of his opinion was that the modern doctor is a sissy. "If these young fellows would spend as much time in their offices and hospitals as doctors did two decades ago, there wouldn't be any shortage of doctors today. The trouble is, they spend too much time on the golf course and at dinner parties these days. There must be some way found to put doctors out in the country. Community-owned hospitals is one answer, I believe." There should be, Dr. Hardy thought, an increasing effort to make the doctor a central figure in the community—someone to whom all families could turn for advice and sympathy as well as for medical treatment, and that it might even be a good idea to empower him to perform marriages.

Since noting this candid "sissy" opinion the writer has read Doctor Lewis J. Moorman's *Pioneer Doctor* (1951, University of Oklahoma Press, Norman, Oklahoma). On page 104 Doctor Moorman says that "the pioneers free from effeminate aestheticism are mentally and physically more competent because of conflict with the rigorous conditions of the frontier." This tends to parallel Doctor Hardy's judgment; not exactly, because it seems to imply that some pioneers are free from effeminate aestheticism and some not.

Among Doctor Moorman's many descriptions of his own vicissitudes on the Oklahoma plains is the following: "Once when this merciless force [the North wind] has made the east and west highways impassible with deep snowdrifts and shunted the cattle against the south fence in search of shelter, I was trying to keep faith with the stork. Having cut across fields to avoid drifts on the highway, we were making uncertain progress over the trackless snow when suddenly the ponies plunged almost out of sight. They had fallen in a small canyon concealed by the sifting snow under the leveling influence of the wind. Hurriedly unhitching, I rescued the ponies, backed the buggy to safety, and made a new start. Winter often brought similar hazards to pioneer physicians on the plains while farmers were sitting by the fire feeling sorry for livestock on the range and lamenting the necessity of feeding and milking."

Pioneer Doctor is a grand book, replete with erudition, wisdom and humor. Open it at any page and you won't be able to stop reading. Principal theme is the patient-physician relationship with the hope of preserving a modicum of the old time spirit of medicine. It is the story of a

great career that could only have been lived in unsocialized America—as pioneer, eminent authority in the field of tuberculosis, teacher, editor, author of great literary charm *(Tuberculosis and Genius,* Chicago, 1940), resourceful and valiant opponent of the trend to socialism, spokesman for American medicine abroad (page 233 et seq.); a great doctor and a great man.

The Hospital of Yesterday and Today

We have received from one of our esteemed contributors, a distinguished physician in the West, a discussion of the present trend in nursing and of the impression given by other hospital personnel. It is self-explanatory and we reproduce it here with the expectation that it will excite further discussion on the part of our readers. The doctor's name has been deleted:

I'VE JUST COME OUT OF THE HOSPITAL

"Seven years ago I was a patient in the same hospital. But this time I thought that I noticed a difference in its atmosphere. Mulling this over has led me to make some generalizations, such as the following:

"(1) The average doctor of today is as well trained and as skillful as the teachers and professors of medicine were fifty years ago.

"(The tendency seems to be that the younger men know so much that they are disdainful of routine measures and manual treatments and have assumed an impersonal air—an air of superiority—so that little of the sympathy and consideration which they actually have is felt by the patients).

"(2) The nurses of today are as well trained and skillful as the ordinary doctors were at the turn of the century.

"(The nurses do a lot of the work formerly restricted to the doctors—like taking blood pressures, giving hypodermic, intramuscular and even intravenous treatments, etc., and this without the basic scientific knowledge which we considered so essential and which we were so slow in acquiring. This makes the information jotted down on the charts less valuable than it should be).

"(3) The average young woman graduate of college or even of some high schools is as conversant with medical science as were the nurses in 1900.

"(This makes the training of practical nurses of less moment than it was when we set up standards for training nurses in, say, 1906).

"Another thing: There was a curious 'leftist' twist to the talk of the younger nurses. For example, one young nurse stated emphatically that she would work only forty hours a week because she could not keep house and rear a family if she worked seven, or even six days, at eight hours a day. In other words, nursing was only a part-time job by which she could earn extra money with which she could live more nearly as she wanted to. Many nurses talk of the need of laying up money for old age.

"(In contrast, an older nurse [who dated from the days when nurses worked at least twelve hours a day] told me that she had brought up three boys who had turned out well; and that she believed that the patients of today received less personalized care than those of the former days).

"This last point registered with me, because I was made to feel that I was on an assembly line and should not claim any personal attention outside the specific orders.

"This present trend must have something to do with the increase in hospital costs,

for the room rates vary from hospital to hospital and between church and secular hospitals. Thus a friend paid $14 a day at a Catholic hospital, while another paid $22 at a large so-called private hospital, and still another paid $18 at another and smaller hospital. But some nurses said that the increase in cost was due to wastefulness (especially in VA hospitals). Another said that it was due to inefficiency in administration.

"This experience has made me wonder if the pendulum has not swung too far—that possibly we have become too scientific, and not such 'good neighbors' as we used to be. Possibly the churches should once more set up nursing orders and deaconesses, who in their old age would be cared for in the 'mother houses,' and who would utilize the services of idealistic young women who could make their lives count by caring for the sick and the afflicted—and thus avoid the evils of governmental inefficiency."

Traffic Mishaps Hampering Defense

Our highway accident victims preempt about 2,700,000 hospital-days a year. This means 270,000, perhaps 300,000, injured persons to be cared for. Aside from the medical and nursing care and bed occupancy involved there is the drain on essential supplies to be considered. The cost of all this has been estimated by Dr. William Bolton of the A. M. A. Health Education Bureau at $45,000,000. More than 17 per cent of the national blood plasma bank is used annually by such patients.

If this situation continues, how will wounded veterans get proper medical care? In the interest of our fighting forces we must ruthlessly put an end to the senseless traffic carnage. Laws must be enforced against the careless, drunken, drugged, poor sighted and moronic drivers operating the equivalent of machine guns against their now defenseless fellows.

The serious traffic offender is an enemy of our wounded soldiery. Let that fact be sloganized.

A Sinking Ship

The March 3 *J. A. M. A.'s* London Letter (page 662) remarks that "the people must realize that the National Health Service is heading for bankruptcy." The fanatical Minister of Health has abandoned the sinking ship Utopia—he who could not resist behaving like a "fairy godmother to an impoverished nation."

Douglas Jerrold, noted British author, in his recently published book *England, Past, Present and Future* (New York, W. W. Norton and Company), defines the present government as totalitarian state capitalism which holds that "the individual has no antecedent rights against the State and the State has no obligation to deal unformly with individuals."

There are some things that even the English can not muddle through.

Toward Solving the Problem of Alcoholism

The Yale Center of Alcohol Studies has developed and applied ideas successfully in local industrial plants; absenteeism has been markedly reduced and production increased. Some of the industrial concerns involved have been large. In view of the national defense effort now in progress the importance of this work is obvious, for it is the belief of the responsible experts that their methods have proven their reliability.

It has taken the defense effort to break down the strong behavioristic factor behind alcoholism; evil customs have been routed.

For this reason alone the defense effort is justified.

MEDICINE

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Mercumatilin (Cumertilin): A New Mercurial Diuretic

O. A. Rose and associates *(American Heart Journal,* 40:779, Nov. 1950) report the treatment of patients with congestive heart failure at the Bronx Veterans Hospital with mercumatilin (Cumertilin); all the patients were kept at rest in bed and were under digitalis therapy. Mercumatilin was used in 20 patients for 44 trials and Mercuhydrin was used in 14 patients for 41 trials; 5 patients were given both diuretics in different trial periods. Both diuretics were given by intramuscular injection in a dosage of 2 cc. in the morning. Satisfactory diuresis was considered to be loss of 3 lb. or more of edema fluid over a period of forty-eight hours. On the basis of "predictability" of a satisfactory response, this was found to be 59.1 per cent in 44 trials with mercumatilin and 58.5 per cent in 41 trials with mercuhydrin; the average weight loss was much the same with the two diuretics. In the 5 patients receiving mercumatilin for 16 trials and mercuhydrin for 20 trials the average weight loss was 4.2 lb. with the former and 4.1 lb. with the latter. The administration of ammonium chloride did not greatly increase the predictability of response with mercuhydrin, but did have a marked effect on the predictability of response with metalluride. None of the patients given mercurmatilin had any abnormal degree of local irritation at the site of injection; there was neither induration nor nodule formation with either preparation. There were no signs of systemic toxicity with mercumatilin in any case. Mercumatilin, in the authors' opinion, is "a safe and effective mercurial diuretic." In a later article, L. H. Sigler and Joseph Tulgan *(American Heart Journal,* 41:125, Jan. 1951) report the use of mercumatilin (Cumertilin) in the treatment of 9 ambulatory patients and 8 non-ambulatory patients with congestive heart failure. All the ambulatory patients had been under observation for one to three years and had been given a weekly injection of Mercuhydrin "to keep them comfortable." When this study was begun injections of Cumertilin were alternated with injections of Mercuhydrin without the patient knowing that a different drug was employed. The total twenty-four hour output of urine was somewhat greater after Cumertilin than after Mercuhydrin. The percentage of output in the first eight hours was somewhat greater with Cumertilin, 57.2 per cent, as compared with 54.2 per cent with Mercuhyrin. Of the 6 non-ambulatory patients, 2 were in an advanced stage of congestive heart failure and responded poorly to any mercurial diuretic. The other 6 patients had a urinary output varying from 50 to

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120 oz. in the first twenty-four hours, from 50 to 75 per cent of which occurred in the first eight hours. In the 75 injections given to 17 patients, reactions occurred 10 times, but all but 3 of these were purely local.

COMMENT

The older preparations were satisfactory. Newer ones would have to be much more effective to replace the others.

M.W.T.

Oral Treatment of Pernicious Anemia with Vitamin B^{12}

L. M. Meyer and associates *(American Journal of Medical Sciences,* 220:604, December 1950) report the treatment of 7 cases of pernicious anemia with vitamin B_{12} given by mouth. The parenteral administration of vitamin B_{12} has been found to be effective in the treatment of pernicious anemia and other types of macrocytic anemia by a number of investigators. The oral administration with the addition of gastric juice or an extract of hog duodenal extract has been employed in a few cases, and Spies has tried the oral administration of vitamin B_{12} without the addition of "intrinsic factor." In the 7 cases reported vitamin B_{12} was given orally in a dosage varying from 75 to 300 mgm. A good clinical remission was obtained in 5 cases, although only 3 of these showed fully normal hematologic values, and only one a maximal reticulocyte response. In the only patient in this group of 5, who showed any neurologic symptoms, these symptoms were entirely relieved, although red blood cells and hemoglobin did not reach the normal level. In the other patient in this group whose blood values remained subnormal an active pulmonary infection was present, and treatment was continued by intramuscular injection of vitamin B_{12} resulting in a complete hematologic remission. The two patients who did not respond to vitamin B_{12} given orally in a daily dosage of 150 and 250 mgm, were subsequently treated with vitamin B_{12} given parenterally with good results.

COMMENT

Parenteral use of vitamin B_{12} is still the method of choice in the use of this vitamin.

M.W.T.

Syphilitic Cardiovascular Disease Combined with Chronic Endocardial Lesions Usually Attributed to Rheumatic Fever

J. R. Smith and associates *(American Journal of Medicine,* 10:37, Jan. 1951) report a case in a man forty-five years of age, whose clinical examination showed aortic dilatation and aortic insufficiency and in addition a mitral diastolic murmur. There was a history of syphilis, but not of rheumatic fever. At autopsy, the aorta and aortic valve showed changes characteristic of syphilis; there was also a chronic endocarditis of the mitral valve, "possibly rheumatic in origin." A review of the literature showed 47 cases reported in which syphilitic cardiovascular disease was combined with chronic endocardial disease definitely or probably due to rheumatic infection. A study was made of 398 autopsy specimens from cases of syphilitic heart disease and 459 autopsy specimens of hearts from adult patients showing rheumatic lesions obtained from the Washington University Department of Pathology and the Pathology Division of the St. Louis City Hospital. It was found that 8 hearts in the entire series showed combined syphilitic and rheumatic lesions; the percentage of syphilitic hearts showing rheumatic lesions was 2.01 per cent, and the percentage of rheumatic hearts showing syphilitic lesions was 1.74 per cent. While the combination of the two types of lesions is relatively rare, it is of importance for the clinician to recognize that both types of lesions may be present in the heart in cases in which the clinical findings indicate that either syphilitic or rheumatic cardiac disease may be present.

COMMENT

There is no reason why the two diseases could not coexist. One has to keep syphilis in mind in every case of this kind.

M.W.T.

Treatment of Non-Specific Ulcerative Colitis with Aureomycin

L. T. Wright and associates *(Annals of Western Medicine and Surgery,* 4:717, Nov. 1950) previously reported 13 cases of non-specific ulcerative colitis treated with aureomycin between November 1948 and March 15, 1949; since that time 17 other cases have been treated with this antibiotic, making a total of 30 cases. Aureomycin was given in a dosage of 250 mgm. every eight hours on beginning treatment; if after a week or more, there was no improvement, this dosage was doubled; if definite and significant improvement occurred after several weeks' treatment, the dosage was reduced to 250 mgm. once or twice a day. Of the entire group of 30 patients, there was a reduction in the number of bowel movements by 50 per cent or more in 25 patients, 83 per cent. Of 26 cases with gross blood in the stools, this disappeared in 21 cases; 26 of the 30 patients (87 per cent) showed a definite improvement in well-being (including a feeling a greater strength and less pain). In 12 of 29 patients, there was an improvement in the condition of the bowel on sigmoidoscopic examination. In 12 patients of the first series, a follow-up study at the end of one year showed that 8 of these patients were well at the time, but 2 had had one or more recurrences, all controlled by aureomycin. Seven patients complained of nausea during aureomycin therapy, but this was well controlled by the use of milk or peptobismol, neither of which interfere with the absorption of aureomycin. Aureomycin has been found to be effective against a wide range of bacteria and a number of viruses; on the basis of the present studies, its ultimate value in the treatment of ulcerative colitis cannot be determined, but the authors have found it "the most satisfactory drug now available" for the treatment of chronic ulcerative colitis. In cases with gross pathologic changes, if medical treatment is unsuccessful, surgery is necessary.

COMMENT

This treatment is worth trying in all cases of ulcerative colitis.

M.W.T.

Treatment of Typhoid Fever: Combined Therapy with Cortisone and Chloramphenicol

J. E. Smadel and associates *(Annals of Internal Medicine,* 34:1, Jan. 1951) report the treatment of 8 cases of typhoid fever with a combination of chloramphenicol and cortisone. In previous experience with the chloramphenicol treatment of typhoid fever, it had been found that although the antibiotic is rapidly effective in the control of the infection, patients did not become afebrile until about the fourth day. This delayed clinical response was considered to be due to some reaction of the patient to the "products of bacterial and tissue destruction" that was present before treatment was begun. Recent experience reported from several institutions has shown that the administration of adrenal cortex hormones has a favorable effect in a number of infectious diseases; and on the theory that cortisone might have a favorable effect on the toxemia of typhoid fever, it was given with chloramphenicol in the 8 cases reported. The patients who were given 200 mg. of cortisone on the first day, and 100 mg. for several days thereafter, with chloramphenicol, became afebrile in an average period of 50.2 hours. But patients who were given larger doses of cortisone—300 mg. on the first day, and decreasing amounts on succeeding days, with the same dosage of chloramphenicol, became afebrile in an average period of 15.5 hours. None of the 8 patients had intestinal perforation, and only one had any severe intestinal hemorrhage. Relapses

occurred in 2 patients who were given the combined treatment for fourteen or fifteen days, but they responded well when chloramphenicol was again given without cortisone, although it was observed that the febrile period was longer in the relapse than during the first attack in each case, when cortisone had also been given. The occurrence of the relapses in these cases was unexpected, as such relapses do not often occur when chloramphenicol is given for two weeks or more; whether this is related to the use of cortisone in combination with the antibiotic cannot be determined. This possibility should be considered, however, in further study of the combined therapy in typhoid fever, which appears to be warranted on the basis of the results obtained in the cases reported.

COMMENT

There will be more and more combinations of cortisone and antibiotic substances in infections. In the case of typhoid it might be well to try this method in every case.

M.W.T.

SURGERY

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The Late Results of Partial Gastrectomy

B. B. Milstein *(Annals of Surgery,* 133:1, Jan. 1951) presents a follow-up study of 101 cases in which gastrectomy was done between January 1940 and September 1947. The operation was done for gastric ulcer in 37 cases, duodenal ulcer in 40 cases and anastomotie ulcer in 4 cases; the other cases were pyloric or combined gastric and duodenal ulcer. The operation done was an extensive gastrectomy with removal of "about three quarters" of the stomach; the anastomosis was retrocolic, no-loop, either end-to-side or end-to-end. In the follow-up study, 94 patients were found to be living, but only 90 were available for detailed study. In the patients who had died, the cause of death was not related to the original condition or the operation, except in one case. In this case the patient had a gastric ulcer penetrating the pancreas when gastrectomy was done; the base of the ulcer was not removed, but the microscopic examination of the part removed showed no evidence of cancer; the patient died five years later; postmortem examination showed a tumor, histologically gastric carcinoma, involving the pancreas. The follow-up study showed 43 patients without gastric symptoms except a feeling of fullness after unusually large meals, 35 patients free from pain with occasional mild symptoms that could in many cases be controlled by care in diet, limitation of the size of the meal, and rest. The result of the operation is therefore considered satisfactory in 78 of 90 cases, or 86.7 per cent. Sixty-six of these patients were working at the same work as previous to the operation and 13 were doing lighter work. The results were not influenced by the type of anastomosis, by the duration of the symptoms prior to operation, or by the type of lesion for which the operation was done (gastric or duodenal

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ulcer). The results were somewhat better in men than in women. There was recurrent ulceration in 1 per cent of the cases. The early postprandial syndrome, occurring within half an hour after a meal, and lasting in some cases as long as three hours, consisted of an uncomfortable feeling in the epigastrium, not pain, but worse than mere fullness; this symptom could often be relieved by the patient's lying down; this syndrome occurred in 19.3 per cent of cases. The late postprandial syndrome — weakness, palpitation, flushing and sweating — occurred just before a meal, or if a meal was missed and was relieved by taking food; this occurred in 18.2 per cent of cases. As free hydrochloric acid production following histamine and insulin occurred in 31.8 per cent of these patients, it seems that the production of achlorhydia by partial gastrectomy is not necessary for good results.

COMMENT

The current literature on gastrectomy for duodenal and gastric ulcer expresses itself in a similar pattern. This article falls into this same category. There is no doubt that gastrectomy when feasible is the operation of choice in the surgical treatment of peptic ulcer. It is not amiss to state that the popularity of vagotomy is on the wane. No emphasis on vagotomy is laid by the author of this study.

B.J.F.

Routine Examination of the Lower Bowel

V. T. Young *(American Journal of Surgery,* 81:18, Jan. 1951) reports that at the Yater Clinic (Washington, D. C.), a sigmoidoscopic examination of all new adult patients is made. In an examination of 500 of these patients who complained of no symptoms referable to the lower bowel, some lesion of the lower bowel was found by the sigmoidoscopic examination in 138 cases, or 27.6 per cent. In 64 cases, hemorrhoids that were large and that would ordinarily have produced symptoms were found; polyps were found in 44 cases and diverticula in 9 cases. Polyps are recognized as a premalignant lesion, and their discovery in 8.8 per cent of these 500 asymptomatic patients is therefore of importance. These polyps were located in the rectum, rectosigmoid and sigmoid, and none had been discovered by digital examination; in some cases the polyps were multiple. Small polyps in this series were treated by fulguration without biopsy; microscopic examination of all polyps over 0.5 cm. was done. Cancer of the lower bowel was found in 5 patients, 1 per cent of the series; in none of these cases was there evidence of a spread of the growth beyond the intestinal wall; no lymph gland metastases were found; the patients were all operated on, and have shown no signs of recurrence, although the follow-up period is too short to determine end results. But it seems evident that the chance for a permanent cure in these cases is excellent, definitely better than if the growth had not been discovered until after symptoms were present.

COMMENT

The Yater Clinic has well learned the teaching of its director. As a student under Dr. Yater I was so vitally impressed by his emphasis on the value of examining the lower bowel that I have never forgotten the importance of this procedure. This survey by Dr. Young corroborates the importance of this examination. Any physical examination is incomplete without a satisfactory study of the rectal and sigmoidal segments of the large intestine.

B.J.F.

The Use of Tantalum Mesh in Inguinal Hernia Repair

A. R. Koontz *(Surgery, Gynecology and Obstetrics,* 92:101, Jan. 1951) describes a method of using tantalum mesh in the treatment of cases of inguinal hernia in which the defect is large and the tissues are of poor quality. It is in this type of case that recurrence most frequently occurs with the usual methods of repair of hernias. In the operation employed by the author, a relaxation incision is made in the sheath of the rectus muscle; the con-

joined tendon is sutured to Cooper's ligament; the internal ring is closed by suturing the internal oblique muscle to Poupart's ligament above and below the cord. A piece of tantalum mesh is placed in the Hesselbach's triangle area; the lower edge of the mesh is sutured to Poupart's ligament after having been turned over on itself. The mesh is then brought into the depression that exists over the suture of the conjoined tendon to Cooper's ligament, and sutured to the first suture line. A few other sutures may be necessary to hold the tantalum mesh in place. Experimentally it has been found that fibrous tissue surrounds and infiltrates tantalum mesh, indicating that the use of this mesh will definitely strengthen the first suture line. This method has been used in 77 patients in a period of twenty-five months, the last patient being operated on only recently. There has been one recurrence in this series.

COMMENT

Recurrence of hernia following operation is an experience of every surgeon. Any new method or material which may eradicate the possibility of recurrence of inguinal herniae is worthy of commendation. In this article the author advocates the use of tantalum mesh. Although this may act as a foreign body, if it proves its worth, it should be recommended.

B.J.F.

Late Results of Vagotomy in the Treatment of Idiopathic Ulcerative Colitis

F. D. Eddy *(Surgery,* 29:11, January 1951) reports a total of 42 cases of idiopathic ulcerative colitis treated by vagotomy at the University of Minnesota Hospital; 20 of these were chronic progressive or recurrent cases; 9 were of the acute fulminating type; and 11 of a less severe acute type, nonfulminating but progressive; in 2 patients the only symptom was persistent diarrhea without demonstrable lesion in the colon. The follow-up of these cases for a maximum period of three years showed 12 were free from symptoms and 18 definitely improved; in 3 cases there was definite clinical improvement, but roentgen examination with the barium enema showed definite progression of the lesions, so that a colectomy was indicated. It was found that a duration of the disease for five years or more has an unfavorable prognosis; fibrosis and scarring of the colon is also an unfavorable factor since this condition is irreversible; other unfavorable factors are massive bleeding; and extensive ulceration of the colon. Because of the high incidence of cancer in cases of ulcerative colitis, especially when there is extensive ulceration of the colon, patients should be carefully followed up after vagotomy, including proctoscopic examination and roentgenological examination with the barium enema; this should be done, if possible, as often as every four months. Vagotomy apparently has its beneficial effect in ulcerative colitis by decreasing intestinal motility and intestinal spasm; apparently also it interrupts "a cycle of nervous and emotional imbalance" affecting the colon. The choice of any method of treatment of ulcerative colitis that involves "salvage" of the colon makes critical evaluation necessary, because of the high incidence of cancer. Vagotomy in the treatment of ulcerative colitis must still be considered to be in the "investigative stage," and it should not be employed indiscriminately in unselected cases.

COMMENT

The treatment of idiopathic ulcerative colitis has been one of the most trying problems confronted by the surgeon and the gastro-enterologist. All new medications are tried in an effort to effect a cure. Now vagotomy finds its advocates. Excessive enthusiasm for this procedure should not be accepted until adequate follow-up studies have justified the enthusiasm.

B.J.F.

Studies on the Susceptibility of Bacteria to Various Antibacterial Agents

C. W. Howe *(Surgery, Gynecology and*

Obstetrics, 91:669, Dec. 1950) reports a study of the susceptibility of 50 strains of organisms isolated from surgical infections to various antibiotic agents. Two methods of testing susceptibility were employed, the serial dilution test and the filter paper disc test. There was a fairly constant rough agreement in the results of the two tests, but the paper disc method showed more resistant readings. These tests demonstrated the well-recognized difference in drug susceptibility of different strains of the same organism, showing the need of in vitro testing of the susceptibility of the organism found in each case to determine the correct antibacterial therapy. These tests demonstrated a high degree of susceptibility to sulfamylon of both gram-positive and gram-negative bacteria commonly found in surgical infections. The findings in this series of tests indicate that sulfamylon is "perhaps the most useful drug" in topical therapy of wound infections. The author has used a mixture of sulfamylon, 5 per cent solution, and streptomycin 200 units per cc., in topical therapy in the prevention and treatment of wound infection (as advocated by E. L. Howes) with good results. The drug susceptibility tests reported also indicate that this combination would be the most effective in most cases for topical therapy of surgical infection.

The Brown Electrodermatome: A New Instrument

H. T. Caswell and associates *(Surgery*, 28:860, Nov. 1950) report the use of the Brown electrodermatome in skin grafting with good results. This new instrument is simple in design; the thickness of the graft is accurately regulated by an adjustable guard. The skin of the donor area is covered with "a light film" of mineral oil before the graft is removed. The authors have found that the technique of skin grafting is much simplified by the use of this instrument, and that the "take" of the grafts obtained with this instrument has been very satisfactory. The chief disadvantage of the Brown electrodermatome is that a graft over 3 inches in width cannot be removed with this instrument; in cases where a wider graft is required, the Padge-Hood dermatome with Reese modification is used; the latter instrument is also preferred for the taking of "pattern grafts." In other cases the Brown instrument has been found to give equally good results with the added advantage of the simplicity of the technique.

✚

Cortisone Inhalation in Pneumonia

A seriously ill patient with lobar pneumonia caused by type VII pneumococci showed prompt symptomatic improvement following the inhalation of cortisone. Twenty-five mg. of cortisone were diluted with 4 cc. of normal saline solution. The patient was given 1 cc. of this solution by aerosol every half hour for 8 hours. The concentration was then increased to 8 mg. per cc. for the next 10 hours. Four additional hourly aerosols at this concentration were followed by hourly aerosols at a concentration of 5 mg. per cc. up to a total of 33 hours of aerosol treatment. The temperature of the patient returned to normal within 12 hours after the first aerosol treatment and other clinical symptoms responded likewise, according to Reeder and Mackey in *Dis. Chest* [*18*: 528 (1950)]. However, the clinical symptoms all returned within 6 hours after cortisone was discontinued.

A 9 day course of aureomycin following the inhalation treatment resulted in a complete cure of the pneumonia, although the cortisone itself had had no evident effect in the pneumococci. However, the authors felt that the cortisone may have made the pneumococci more accessible to the antibiotic.

MEDICAL BOOK NEWS

Adaptation Syndrome

The Physiology and Pathology of Exposure to Stress. A Treatise Based on the Concepts of the General-Adaptation-Syndrome and the Diseases of Adaptation. By Hans Selye, M.D. Montreal, Canada, Acta, Inc., [c. 1950, The Author]. 8vo. 822 pages, plus 203 pages references. Illustrated. Cloth, $14.00.

This is a tremendous compilation, discussion and synthesis of the great body of data and observations bearing on the author's concept of the General Adaptation Syndrome and the Diseases of Adaptation. It includes a vast bibliography concerning the subject. Selye takes great pains to define the many terms, concepts, and interpretations peculiar to the organized unity which he conceives to underly a great variety of superficially unrelated phenomena, providing what is in reality a concept and interpretation of Medicine and Disease in the broadest sense.

Selye's concepts of reaction and adaptation to injury may be the subject of much justifiable criticism and considerable modification with the passage of time. He is the first to admit this. But there can be little doubt that his contribution of a system of thought and interpretation of Medicine in the grand sense represents one of the really great medical accomplishments of our era, not only in making for a more intelligent use of information we have at hand but, what is even more important, in the almost infinite variety of subjects requiring research and clarification to which it points.

ALFRED P. INGEGNO

Narcoanalysis and Jurisprudence

Narco-Analyse et Narco Diagnostic (Histoire D'un Proces). By G. Heuyer. Paris, L'Expansion Scientifique Française, [1949]. 8vo. 86 pages.

This booklet came into being as a result of accusations against the author and two other distinguished French physicians because they used Pentothal in unmasking a spurious aphasia. The charges were that the venepuncture produced wounds on the prisoner and that the doctors violated the rule of professional secrecy. Much material is presented as to the history and legality of this and similar procedures. The reaction of the press, public as well as Continental psychiatric opinions are related. Despite all the trials and resistance the author is certain that narcoanalysis will take its place along with all other recognized and accepted diagnostic approaches.

The French is quite simple, making this small volume a must for all those interested in narcodiagnosis.

ARTHUR J. LAPOVSKY

—Continued on page 318

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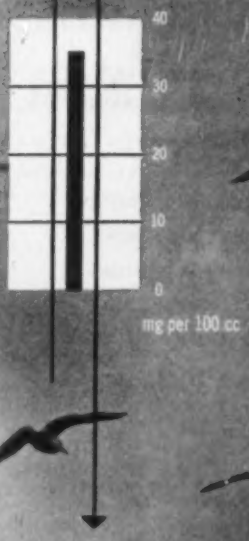

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Ref. 1) Editorial: J.A.M.A. 138: 367-8 (Oct. 2) 1948
2) Smith, R. T.: Journal-Lancet 70: 192, 1950
3) Spitzer, J. M. and Shapiro, S.: Am. J. Dig. Dis. 14:80, 1948

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MEDICAL BOOK NEWS

—Continued from page 316

Fiction

Medical Meeting. By Mildred Walker. New York, Harcourt, Brace & Co., [c. 1949]. 8vo. 280 pages. Cloth, $3.00.

This is the story of a doctor practicing in a tuberculosis sanitorium who developed a strain of an anti-biotic and used it with some success in a few cases of tuberculosis and brucillosis. He attended a medical meeting in Chicago to read a paper he had prepared. Unfortunately a similar paper was presented at an earlier session from a college connected laboratory which anticipated and minimized the findings of our hero. His discouragement is shared by his wife, who, on her return home, destroys the cultures. The happy ending is found in the willingness of the doctor to consider a position as an associate in the college laboratory for the continuance of his studies, instead of remaining as medical director of the sanitorium. A good story, spoiled, to some extent, by too much gossip and family affairs, including a quite superfluous sex incident.

JOSEPH RAPHAEL

Convulsions In Childhood

Epilepsy and Convulsive Disorders in Children. By Edward M. Bridge, M.D. New York, McGraw-Hill Book Co., [c. 1949]. 8vo. 670 pages, illustrated. Cloth, $8.50. (McGraw-Hill Series in Health Science).

This book is a comprehensive survey of the problem of epilepsy and convulsive disorders in children. It is based on data acquired by the author from his direction of the epilepsy clinic at Johns Hopkins Hospital.

Anyone interested in convulsive states will find this book extremely valuable.

It is highly recommended to the profession.

STANLEY S. LAMM

—Continued on page 320

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Bronchospasm, respiratory distress and anxiety are suppressed by AMINET Suppositories — effectively, quickly, safely and lastingly. Valuable for both therapy and prophylaxis, AMINET combines aminophylline for relaxing effect and pentobarbital sodium for sedative effect. This dual action that rapidly overcomes respiratory distress is therapy well-established in intrinsic and extrinsic asthma, cardiac asthma and Cheyne-Stokes respiration.

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*Patent Pending

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MEDICAL BOOK NEWS

—Continued from page 318

Thoracic Surgery

Thoracic Surgery. By Richard H. Skeet, M.D. Illustrations by Jorge Rodriguez Arroyo, M.D. Philadelphia, W. B. Saunders Co., [c. 1950]. 8vo. 345 pages, illustrated. Cloth, $10.00.

This small volume is chiefly valuable for the explicit directions given about the technical performance of most standard thoracic, abdomino-thoracic and cervico-thoracic operations. It is based on an excellent brief consideration of the special anatomy, with helpful drawings mainly by Dr. Jorge R. Arroyo. No consideration is given to the very important technics of making an accurate diagnosis, and practically nothing is said of the physiology of the thorax.

The author's "concept that any properly qualified surgeon can acquire with relative ease a satisfactory proficiency in thoracic surgery by employing the technics herein described" certainly depends on what "properly qualified" implies. It should be emphasized that a thorough knowledge of the rather complicated modern technics of exact diagnosis and of thoracic physiology are basic qualifications before attempting to correct congenital cardiac and vascular anomalies, even such a simple one as the ligation of a patent ductus.

WILLIAM H. FIELD

Antihistaminics

Antihistamines, Industry and Product Survey. By Nathan Wishnefsky, B.S. in Phar. New York, Chemonomics, [c. 1950, R. S. Aries & Associates]. 8vo. 157 pages, illustrated. Paper, $5.00.

This volume presents an analysis of the back ground and development of the antihistamines and was written primarily for those interested in the technical and marketing aspects of pharmaceutic drugs. The chapters on the development of the

—Concluded on page 322

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Bleeding may be as easily controlled as the flow of glucose, plasma or other measures used to repair the damage of hemorrhage . . . if you use KOAGAMIN. Unlike vitamin K, useful only where prolonged prothrombin time is a factor, KOAGAMIN acts in minutes. In such cases, however, KOAGAMIN may be used in conjunction with vitamin K to achieve faster control.

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useful in many hemorrhagic conditions, and in blood dyscrasias.

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MEDICAL BOOK NEWS

—Concluded from page 320

antihistamines and on the comparative clinical applications of these drugs in allergic diseases are worth reading. Thirty-one pages are devoted to the use of the antihistamines as cold remedies.

MAX HARTEN

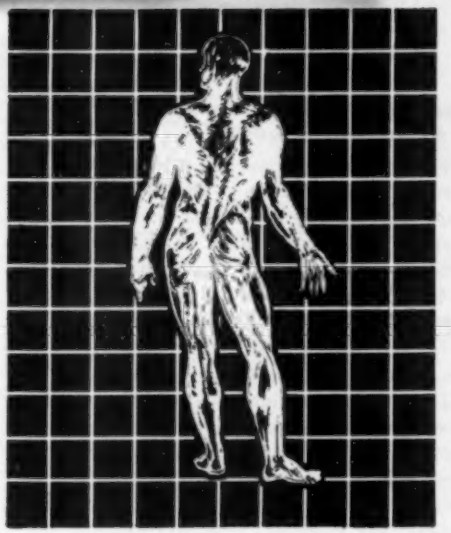
Malaria

Malaria, The Biography of a Killer. By Leon J. Warshaw, M.D. New York, Rinehart & Co., [c. 1949, The Author]. 8vo. 348 pages. Cloth, $3.75.

The author has traced the history of malaria and its treatment from the earliest times. The derivation of the name, "malaria," from Mal Aire, evil air, and the persistence of the beliefs in its causation add an aura of romance to the story of the many investigations which finally led to the identification of its real origin. The account of the use of cinchona and quinine and of the many products which have been devised to assist or displace quinine is well written and of progressing interest. Investigation for newer and more effective products is evidently still being vigorously pursued as is evidenced by a popular article in the November issue of a monthly magazine describing the study of Primaquine, SN-7618, on the inmates of a prison. Those of us in the north east of America will wonder at the statement that at least 300 million people will suffer from malaria this year and that, of these, at least 3 million will die.

The book makes interesting and instructive reading and is well worth while.

JOSEPH RAPHAEL



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The average human body has a surface skin area of 18 to 20 square feet—and every inch is at all times susceptible to one skin disorder or another.

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All the Therapeutic Advantages of Crude Coal Tar with Irritating Residues Removed

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	CASES	CLEARED OR MARKED IMPROVEMENT	MODERATE IMPROVEMENT	SLIGHT OR NO IMPROVEMENT
CHRONIC RECURRENT CONTACT DERMATITIS	11	9	1	1
PSORIASIS	11	2	4	5
NEURODERMATITIS	5	3	2	–
ATOPIC ECZEMA	8	6	1	1
SEBORRHEIC DERMATITIS	6	5	1	–
VARICOSE ECZEMA	4	1	1	2
ALLERGIC DERMATITIS	3	–	2	1
LICHEN PLANUS	3	2	1	–
TOTAL	51	28	13	10
%		54.9	25.5	19.6

For prescriptions—all pharmacies stock 2¼-oz. & 8-oz. jars; for dispensing purposes, 1-lb. & 6-lb. jars available thru your surgical supply dealer.

**Lowenfish, F.P., N.Y. State J. Med., 50:922 (Apr. 1) 1950.*

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MODERN THERAPEUTICS

Terramycin in Peritonitis

Terramycin, given in a dose of 50 mg. per Kg. 24 hours postoperatively and then 25 mg. per Kg. every 6 hours, caused all of 10 dogs with experimentally induced peritonitis to survive for 14 days. With aureomycin 1 of 10, and with chloramphenicol 2 of 10, failed to survive. Yager, Mansberger, Thomas and Barnes reported in *Ann. N. Y. Acad. Sci.* [*53*:319 (Sept. 15, 1950)] that autopsy showed that all of the animals treated with terramycin had developed a localized peritonitis.

The authors also reported that a patient who had an extensive peritoneal reaction following the surgical removal of a suppurative, perforated appendix had an uneventful recovery after the administration of 3 Gm. of terramycin postoperatively followed by 500 mg. every 4 hours for 7 days. The same postoperative course was shown by 5 additional patients with septic peritonitis secondary to appendicitis.

Protein Studies in Peptic Ulcer

Rafsky, Krieger and Honig reported in *Gastroenterol.* [*16*:358 (Oct. 1950)] that 25 Gm. of Protinal (nonhydrolyzed case in with added carbohydrate) suspended in 250 cc. of water had a greater immediate buffering effect and produced a secondary rise in free HCl than did 25 Gm. of Aminonat (protein hydrolysate, NaCl and flavor) in 30 patient with clinical and roentgenographic evidence of gastric or duodenal nonobstructive ulcers. However, total acidity increased immediately and progressively after both protein preparations and showed a tendency to level off at the end of about 2 hours.

Therapeutic Use of Terramycin in Rickettsial Diseases

Terramycin prolonged the life of embronated eggs infected with *Rickettsia tsutsugamushi, R. rickettsii* and *R. burneti.* Terramycin base, its sodium salt and its hydrochloride were all found to be effective. Sodium terramycin, in a daily oral dose of 1 mg., prevented death in mice infected with *R. tsutsugamushi* when given from the 1st or 9th through the 21st day after innoculation but was uneffective when given from 1 day before through the 10th day after innoculation.

Smadel, Jackson, and Ley reported in *Ann. N. Y. Acad. Sci.* [*53*:375 (Sept. 15, 1950)] that 3 patients with scrub typhus were given a single oral dose of 3 Gm. of terramycin and 3 patients were given an initial dose of 3 Gm. followed by 0.25 Gm. every 3 hours for 24 hours. Two patients on each regimen became afebrile within 72 hours. One of the other 2 became afebrile when chloramphenicol was substituted for terramycin.

Gantrisin in Urinary Tract Infections

Urinary tract infections were controlled in 67 of 100 patients with Gantrisin (3, 4-dimethyl-5-sulfanilamido-isoxazole). Among the 100 patients there were 11 acute and 42 chronic cases of cystitis and 47 cases of pyelonephritis. The drug was given to adults in a dose of 4 Gm. a day in divided doses of 1 Gm. until a total of 25 Gm. had been given. Children were given a total dose of 20 to 25 Gm. divided into 0.25 Gm. doses with up to 2.5 Gm. being given a day. Most patients received one such course of treatment but 9 received a second course.

Writing in *J. Urol.* [*64*:801 (1950)] Stewart and Lash stated that a total of 111 different micro-organisms were isolated from the patients. Gantrisin was the most effective against *E. coli, P. vulgaris, Ps. aeruginosa* and Gram positive cocci. The most resistant organism was

A. aerogenes. The authors stated that side reactions were minimal and that there were no instances of crystalluria.

Hyaluronidase in Tuberculosis

Experiments on guinea pigs showed that subcutaneous doses of 25 turbidity reducing units per day for 30 days exerted no appreciable effect on experimentally established tuberculosis. However, the intracutaneous injection of either 5 or 25 turbidity reducing units of hyaluronidase at the site of intracutaneous injection of tubercle bacilli at the same time or 1 hour after the bacilli were injected, caused a marked spreading effect of the disease with multiple skin tubercles as well as more extensive ulcerations. Corper and Cohn therefore concluded in *Am. Rev. Tuberc.* [*63*:108 (Jan. 1951)] that it would appear to be inadvisable to use hyaluronidase to speed the entrance of slowly acting bactericidal agents into disease foci.

Prodigiosin Destroys Amoebae

The antibiotic prodigiosin was found to exert a direct destructive action on amoebae in cultures in buffered egg-yolk infusion with rice starch. The amoebae sudied were *E. histolytica.* Combined with the amoebae was a mixed bacterial flora in one series and *Aerobacter aerogenes* in another. Balamuth and Brent, writing in *Proc. Soc. Exp. Biol. Med.* [*75*:374 (1950)], stated that dilutions of the antibiotic as great as 1:2,000,000 had a clearly destructive effect. Higher concentrations caused rapid lysis of the amoebae. The authors also stated that the antibiotic had no effect on the associated bacteria in either series. In addition to this latter finding studies of the oxidation-reduction potentials of the cultures helped to rule out the possibility that the antibiotic acted against the amoebae by atacking the associated bacterial flora.

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Histamine in the Treatment of Claudication

When a thrombus occurs and blocks a main vessel in a limb the collateral vessels must develop to the point where they can supply the tissues distal to the thrombus, or serious complications arise. Treatment designed to dilate the vessels of the collateral network is usually employed. Mackey introduced a solution, made by dissolving 2 mg. of histamine acid phosphate in 500 cc. of normal saline solution, into the femoral artery of 14 patients. This treatment was repeated 10 times at intervals of 1 week. Writing in *Brit. Med. J.* [No. 4688:1086 (Nov. 11, 1950)] the author stated that 9 of the 14 patients showed subjective and clinical improvement as evidenced by increased ability to walk and by diminished "rest pain". The other 5 patients were not improved but none of the patients showed evidence of the treatment causing any harm. The greatest advantage of this method of treatment seems to be that the vasodilation is confined almost entirely to the affected limb with very little general effect.

Use of Amphetamine Sulfate in the Vomiting of Pregnancy

A series of 165 patients with nausea and vomiting of pregnancy were given amphetamine sulfate (Dexedrine). Complete relief was obtained in 90 per cent of the patients, according to Anspaugh in *Am. J. Obst. Gynec.* [*60*:888 (1950)]. The substitution of a placebo caused the symptoms to reappear in all but 13 of these. Complete relief occurred in 4 to 10 days. The only side reaction was nervousness which was controlled by reducing

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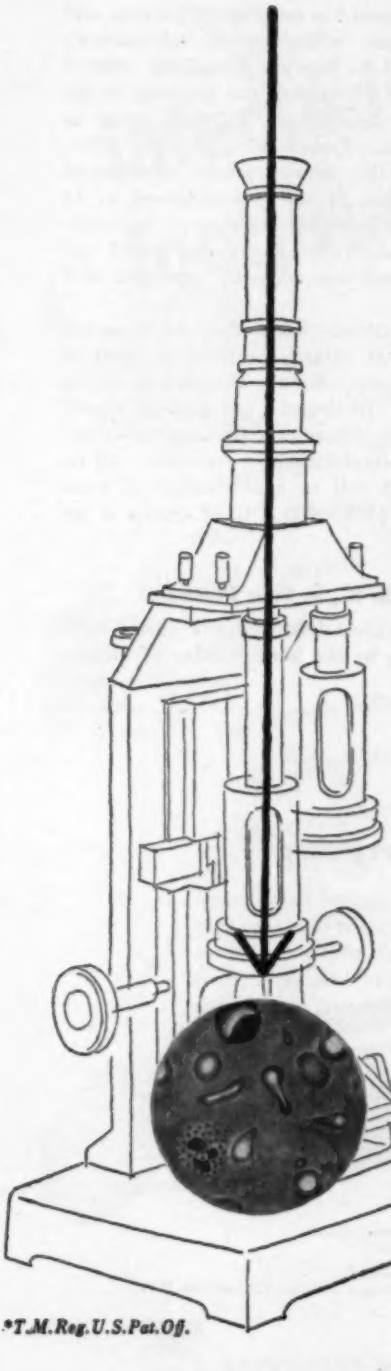

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Thiamine hydrochloride (vitamin B_1)		6.0 mgs.
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Niacinamide***		24.0 mgs.
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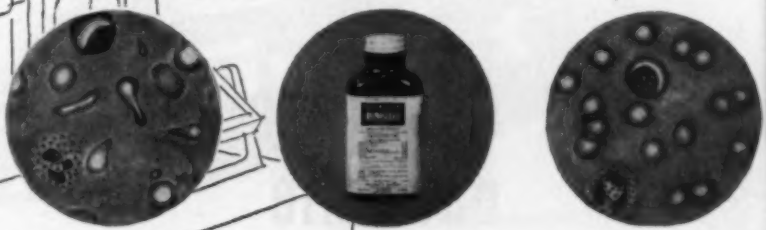
Ascorbic acid (vitamin C)		90.0 mgs.

** The need in human nutrition has not been established
***The minimum daily requirement has not been established.

INDICATIONS: HEMOSULES* 'Warner' are indicated in idiopathic hypochromic anemia and hypochromic anemias secondary to (resulting from iron deficiency states in) acute or chronic infection, malignancy, acute or chronic blood loss, parasitic infection, malaria, pregnancy, hypothyroidism, inadequate iron intake, and gastrointestinal disease; and chlorosis.

PACKAGE INFORMATION: HEMOSULES* 'Warner,' hematinic capsules, are available in bottles of 100, 250, and 1,000.



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MODERN THERAPEUTICS

—Continued from page 58a

the dosage or administering small amounts of barbiturates. The advantages of this treatment are the mental and physical alertness which it produces and the general feeling of well-being.

Use of Vitamin A in Menstruation Disorders

Doses of 100,000 I. U. of vitamin A were given orally following lunch and dinner from the 15th day of the menstrual cycle to the 1st day of menstruation to 30 patients with menstrual disorders. The treatment was repeated for 3 to 4 months. Mastodynia practically disappeared or was improved in 29 patients but was unaffected in one. When adenosis was present the infiltration of the interstitial tissue disappeared and painful nodules diminished in size after the 2nd or 3rd month. Premenstrual pelvic and abdominal pain in 22 patients was completely relieved in 12 and improved in the other 10 patients, and edematous infiltration of subcutaneous tissue of the legs was completely relieved in 14 of 15 patients and improved in the other. Argonz and Abinzano stated in *J. Clin. Endocrinol.* [*10*:1579 (Dec. 1950)] that nervous tension disappeared in 9 patients and was improved in 14 others. Following the therapy dysmenorrhea practically disappeared in 17 patients and was markedly improved in 7 others.

The authors stated that the beneficial results of therapy persisted in most of the patients after the vitamin was discontinued. However, a few patients experienced a return of attenuated symptoms after several months of remission. All responded well to a new course of treatment with 100,000 I. U. of vitamin A per day.

Vitamin B_{12} in Skin Diseases

Seborrheic dermatitis was treated in 37 patients by the intramuscular administra-

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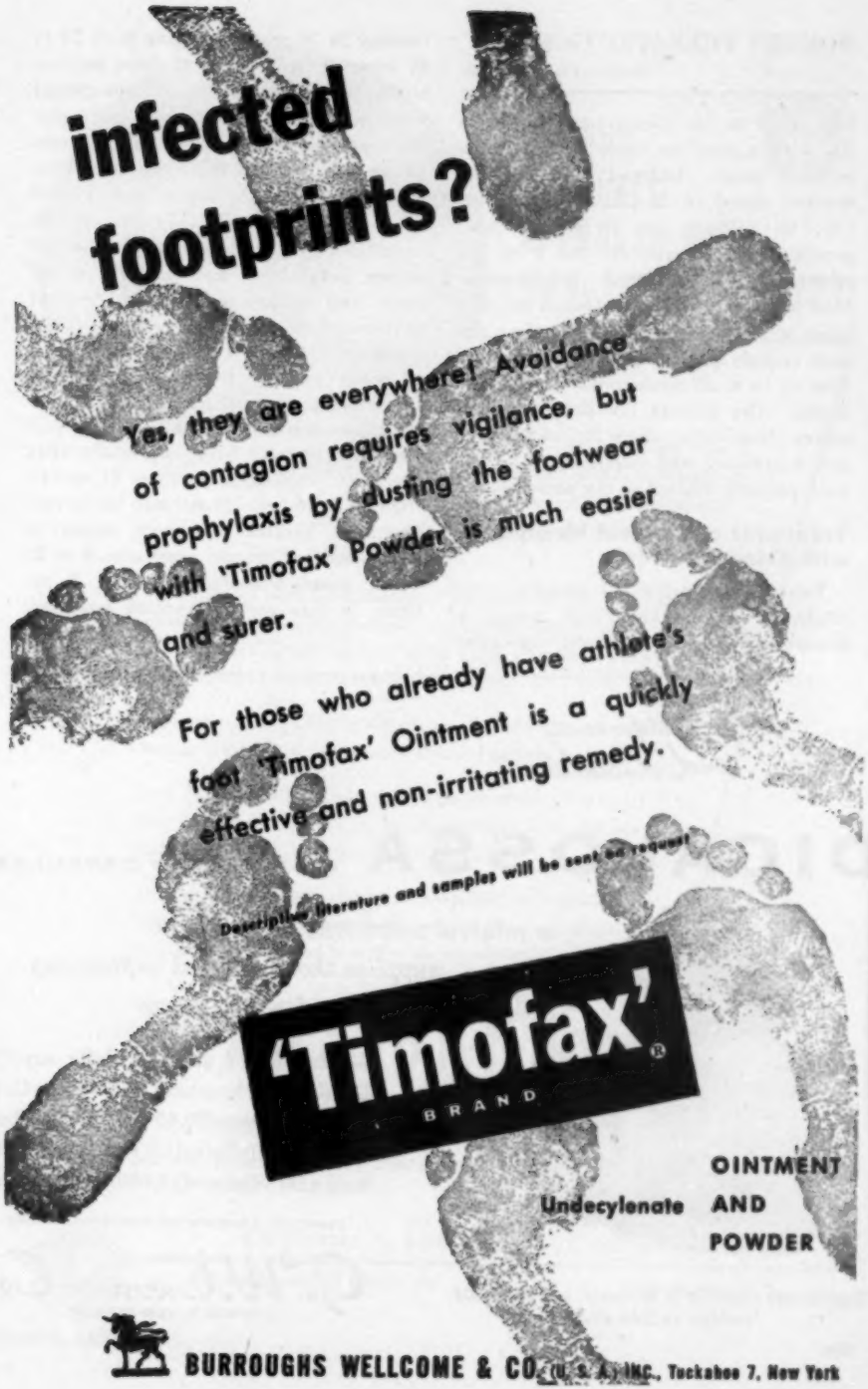
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MODERN THERAPEUTICS

—Continued from page 60a

tion of 10 to 30 micrograms of vitamin B_{12} once a week or, every 2 to 3 weeks in some cases. Andrews, Post and Domonkos stated in *N. Y. State J. Med.* [*50*:1921 (1950)] that 16 patients were greatly improved and all but 2 of the others showed moderate improvement. Mild recurrences were controlled satisfactorily with a few additional injections and were entirely prevented by a maintenance dose of 15 to 30 micrograms every 2 to 3 weeks. The authors felt that no recurrences would occur where foci of infection and nutritional and endocrine disorders were properly treated at the same time.

Treatment of Surgical Menopause with Estradiol Pellets

Two 25 mg. pellets of estradiol were implanted in the abdominal wound at hysterectomy or bilateral salpingocophorectomy in 26 women ranging from 23 to 48 years of age. Eight of these patients began to have vasomotor menopausal symptoms 11 to 17 months postoperatively and 18 were still free of symptoms 10 to 19 months following operation. Brown, Lucente, Alesbury, and Perloff reported in *Am. J. Obst. Gynec.* [*61*:200 (Jan. 1951)] that a second group of 12 women ranging in age from 15 to 48 years and undergoing similar surgical treatment had one 25 mg. estradiol tablet implanted at the time of operation. Three of these patients began to experience vasomotor menopausal symptoms 7 to 9 months postoperatively while 9 were still free of symptoms 5 to 12 months after operation. A control group of 37 women from 20 to 66 years of age who underwent the same surgical treatment began to experience menopausal symptoms 1 to 32 weeks postoperatively. However, 8 patients in this group remained symptom-

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free, but 5 were postmenopausal.

The authors stated that there were no wound complications from this method of therapy and that none of the organs removed surgically exhibited any malignancy or endometriosis.

Therapeutic Use of Penicillin G in Scarlet Fever

Five different treatment schedules were followed in the therapy of a total of 117 patients with scarlet fever, varying in age from 2 to more than 18 years. Treatment was with crystalline penicillin G dissolved in 1 cc. of normal saline or with tablets containing 100,000 units each. Dosage schedule A was 250,000 units intramuscularly twice a day for 10 days; B was 250,000 units orally twice a day for 10 days; C was 150,000 units intramuscularly twice a day for 10 days; D was 150,000 units orally twice a day for 7 days; and E was 100,000 units intramuscularly twice a day for 7 days.

Weinstein and Daikos in *Am. Practitioner* [2:60 (Jan. 1951)] stated that the rate of fever reduction was the most in schedule A and similar with schedule B but in a smaller number of patients. Schedules A and B caused the disappearance of pharyngitis in about 70 per cent of the patients within 2 days but the other schedules had little effect. Schedules A and B were also most effective in causing the return of the WBC and sedimentation rate to normal. Schedule A caused negative upper respiratory cultures for β-hemolytic streptococci within 24 hours after the start of therapy and also eliminated suppurative complications, but not glomerular nephritis or probable rheumatic fever. The other schedules were less effective. However, the scarlatinal eruption was not shortened in duration by any of the schedules employed.

Complication of Antibiotic Therapy With Monilial Infections

A series of 25 cases was reported by Woods, Manning, and Patterson in *J. A. M. A.* [*145*:207 (Jan. 27, 1951)], 20 of whom had had infections of the oropharnyx, 3 of whom had had infection of the intestinal tract with diarrhea, and 2 of whom had had pulmonary infections. In each case penicillin, aureomycin or chloramphenicol had been given with an initial improvement followed by complications, which were proved by culture to be caused by *Candida albicans.* The authors conducted *in vitro* studies on a strain of the monilia isolated from one of the patients and on 3 other strains, but no evidence was found to indicate that any of the 3 antibiotics either increased or decreased the rate of growth of the monilia *in vitro.* The authors felt that the suppression of bacterial flora co-existing with the *Candida albicans* and competing for nutrition on the same substrate was the most probable cause for monilial overgrowth and host infection.

Clinical Studies on Terramycin

Terramycin hydrochloride produced favorable clinical results in 8 of 19 patients with pneumococcal pneumonia, all of 6 with nonpneumococcal pneumonia, 7 of 8 with clinical influenza, all of 6 with pertussis, 10 of 30 with urinary tract infections, all of 4 with salmonella gastroenteritis, 2 of 3 with streptococcal infections, 1 chronic diphtheria carrier, and 1 with staphylococcal cellulitis, the dose usually employed was 0.5 Gm. every 4 hours. The antibiotic had little or no effect on 4 with bronchopulmonary infections, 1 with recurrent acute sinusitis, 3 with aseptic meningitis, and 1 with putrid empyema.

Finland, Gocke, Jackson, Womack and Kass reported in *Ann. N. Y. Acad. Sci.* [*53*:290 (Sept. 15, 1950)] that 49 of the total of 87 patients showed some toxic

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effects from terramycin. The reactions were sufficiently severe in 11 to require the discontinuation of therapy. Diarrhea, nausea and vomiting were the most frequent side reactions.

Testosterone in Advanced Carcinoma of the Breast

Testosterone was given to 18 patients with far advanced carcinoma of the breast. The dose used in such conditions varies widely but King reported in *A. M. A. Arch. Surg.* [*61*:593 (1950)] that the starting dose employed with these patients was 250 mg. of testosterone propionate in oil administered intramuscularly every other day to a total of 2500 mg. After a treatment-free interval of varying length either a single weekly dose or a course of 2500 mg. over a period of 20 days was given at intervals as demanded by the reappearance of pain or disability.

This type of treatment temporarily rescued 7 of 13 patients, who lived over 30 days after the start of therapy, from an invalid state or a terminal narcotic status and reinstated them as useful citizens for an average of over one year. An additional 4 patients received enough benefit to have justified the course of treatment.

Penicillin in Buffered Sulfonamides for Gonorrhea

Oral treatment of 92 ambulatory patients with acute gonorrheal urethritis with a sulfadiazine-sulfamerazine mixture combined with penicillin was compared with penicillin alone. Forty-seven patients received 0.8 Gm. 4 times a day for 5 days of the sulfadiazine-sulfamerazine mixture buffered with sodium citrate combined with doses of 25,000 or 50,000 units of penicillin while 22 patients received 15,000 units of penicillin per dose com-

—Concluded on page 68a

outstanding relief of

Pruritus

with new synthetic

EURAX® CREAM

(N-ethyl-o-crotonotoluide*)

non-sensitizing – "We have used EURAX in approximately 400 cases. . . . There was only one instance of sensitization."

longer-lasting – "Fifteen dermatologic entities were treated. . . . The antipruritic effect lasted approximately *six hours* after application in some instances and as long as *twelve hours* in others."

persistently effective – ". . . it seldom lost its effect after an initial amelioration. . . ."

non-toxic – "Because of its low sensitizing index and the absence of toxicity, the ointment seems to be particularly suitable for those cases where long-continued use is expected."

cosmetically acceptable – "EURAX is odorless and non-staining . . . an elegant addition to our dermatologic therapy."

All quotations from paper presented before the 144th Annual Meeting of the Medical Society of the State of New York, New York City, Section on Dermatology and Syphilology, May 12, 1950. Peck, S. M. and Michelfelder, T. J. New York State J. Med. *50*:1934 (Aug. 15) 1950.

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EURAX Cream (brand of Crotamiton) available in 10% concentration in a vanishing-cream base: tubes of 20 and 60 Gm. and 1 lb. jars.

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—Concluded from page 66a

bined with the sulfonamide mixture. A third group of 23 patients received 25,000 unit doses of penicillin in the buffered vehicle without sulfonamides. The rate of cure was 93.6 per cent in the first group, 72.7 per cent in the 2nd group, and 60.8 per cent in the 3rd group, according to Johnson, Seabury, and Dumville in *Am. J. Syph. Gonor. Ven. Dis.* [*35*:83 (Jan. 1951)]. Tests on 8 normal subjects revealed that penicillin blood levels were rarely detectable after single oral doses of 25,000 units of penicillin in water, but that peak levels of 0.03 to 0.06 units per cc. of blood usually appeared in less than one hour when the same dose of penicillin was given in the sulfonamide buffered solution or in the buffer solution alone. There was no significant difference in the blood levels with or without sulfonamides.

Treatment of Bronchial Asthma with ACTH

A group of 23 patients, ranging in age from 13 to 79 years, with severe chronic bronchial asthma were treated with subcutaneous injections of 10 to 40 mg. of ACTH 3 to 6 times a day for 5 to 22 days. A definite therapeutic effect was usually obtained with 45 to 60 mg. a day, according to McCombs, Cleroux, and Rosenberg in the *Bull. New England Med. Center* [*12*:187 (Oct. 1950)]. In all but 1 patient, the hormone produced complete remission, but in all of the cases there was remission within 5 days to 4½ months even though the ACTH was withdrawn slowly. Four of these reported that the asthma was less severe. Seven patients were given a second course of treatment, 2 were given a third course, and 4 have subsequently been maintained on continuous therapy for a period as long as 3½ months. Side effects were not severe.

NEWS AND NOTES

Medical School Drops Ban On Out-of-State Students

University of Wisconsin regents recently opened the way for out-of-state students to again be accepted in first-year classes of the Medical school.

The regent action limits the number of non-resident students to 5 per cent of the total of the first year class for any given year.

Dean William S. Middleton pointed out that the action was now possible due to the decline of veteran enrollment. The restriction originally was imposed because University sentiment during crowded post-war days was that the University's major responsibility was to Wisconsin students.

DDT Insecticide Is Safe If Wisely Used

DDT, an essentially poisonous material, can be used with a wide margin of safety if it is wisely used, reports the Committee on Presticides of the Council on Pharmacy and Chemistry of the American Medical Association ina recent issue of the *Journal of the A.M.A.*

DDT—in the form of powders, solutions, emulsions and aerosols—has been widely used in recent years to control plant and animal pests as well as disease-carrying insects with a great deal of success.

The committee, which recently reviewed literature and case reports on the substance, points out that the poisonous effect

—Continued on page 72a

Doctor, prevent rhus poisoning, • the easy way

It's easy for your rhus sensitive patients to get pre-seasonal protection with Cutter Poisonok® or Poisonivi®. Clinical results of over 20 years of use prove that these orally* administered products are specific for desensitization. They keep the average person symptom-free for 3 to 8 months.

Adjustable Drop Dosage

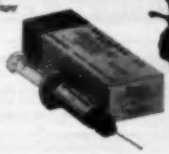
Taken in a glass of water, both Poisonok and Poisonivi provide an easy, well-tolerated mode of administration which permits adjustment of dosage to fit individual needs.

Here's How Easy! Average Dosage Schedule:

1st Day—one drop in half glass of water before breakfast.

2nd Day—two drops; continue increasing dosage one drop each day until 10 drop daily level is reached. Finish contents of 13 cc. bottle at daily 10 drop dosage.

* *Available as Tonsil® and Tonsil® in disposal syringes and vials for injectable therapy*



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Oral Poisonok and Poisonivi are biologically standardized alcoholic dilutions of highly purified Rhus toxin.

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NEWS AND NOTES

—Continued from page 70a

of DDT on living organisms decreases with the increase in complexity of the organism. Thus insects, a lower type of organism, are destroyed by the substance while human beings and the higher types of animals are "not likely" to be harmed.

Some human deaths, however, have been caused by DDT and therefore "certain precautions must be observed to guard against its potential toxic properties," they added.

A warning was given to farmers to be careful when applying DDT to food or fodder crops. DDT aplied directly to the edible portions of a plant may result in poisoning. It should not be used on dairy cattle or animals being prepared for slaughter, the committee pointed out, since there is a danger of acumulation of the substance in the milk and tissues of treated animals.

Other precautions suggested by the committee are as follows:

"DDT insecticides should never be stored in food cupboards or medicine chests where there is a likelihod of contamination of food or mistaken use. All exposed foods, utensils and working areas must be covered when kitchen and dining areas are being sprayed. Children's toys or cribs and rooms occupied by sick people should not be sprayed. Use of oil solutions on household pets should be avoided and DDT powders should be used only where they cannot be licked off. Intimate skin contact with aerosol discharge is to be avoided. Plants and aquariums in the home should be removed or covered be-

—Continued on page 74a

Dramatic RELIEF OF SKELETAL-MUSCLE SPASM BEFORE THE PATIENT LEAVES THE OFFICE...

PHYATROMINE brings about gratifying improvement in conditions accompanied by muscle spasm—within 30 minutes of injection.[1,2] Spasm-locked muscles relax almost immediately, with resultant relief of pain and increase in joint mobility; relief lasts for three to five days (or longer after repeated injections).[1,2]

Conditions in which the accompanying spasm responds favorably to **PHYATROMINE** injections include: wrenched neck, back, or shoulder; pulled ligaments; lumbosacral and sacroiliac strains; myositis; bursitis; painful fixation of the knee joint; spasm due to shrapnel wounds; and certain cases of rheumatoid arthritis and osteoarthritis.[1,2,3,4]

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FORMULA:
Each cc. contains:
Physostigmine Salicylate..... 0.6 mg.
Atropine Sulfate..... 0.6 mg.
In isotonic solution of sodium chloride.

SUPPLIED: List No. 1740: 1-cc. ampuls, boxes of 25; 30-cc. multiple-dose vials.

REFERENCES: 1. Marshall, W.: Journal-Lancet 70: 391 (Oct.) 1950. 2. Stahmer, A. H.: Wisconsin M. J. 49: 1020 (Nov.) 1950. 3. Stahmer, A. H.: To be published. 4. Goldman, J., and Cohen, A.: Journal-Lancet 66: 415 (Dec.) 1946.

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—Continued from page 72a

fore applying DDT sprays or aerosols. The use of oil solutions in the vicinity of open fires should be avoided because of the inflammability of such mixtures. . . .

"Persons exposed to large amounts of DDT dusts and powders under confined conditions or where dust particles are not carried away by free movement of air currents should wear respirators. [Chronic poisoning from DDT may result from prolonged ingestion or exposure to small amounts.] Such conditions might be encountered in mass delousing procedures, larviciding with dusts, and manufacturing or formulating operations. Protective clothing should be worn when there is a possibility of greases and oils contaminating the skin, thereby enhancing the absorption of DDT dusts or powders. . . .

"Frequent or prolonged exposure to emulsions or solutions of DDT in petroleum oils and organic solvents should be avoided unless protective clothing, goggles and neopreen or solvent-resistant gloves are worn. [Oily solutions may be absorbed through the skin.] Clothing must be changed promptly if concentrates are spilled on them. A contaminated skin area which has come in contact with DDT soaked clothing or spilled DDT concentrates should be washed immediately with soap and water. Concentrates should be mixed in well ventilated rooms and fire precaution observed when volatile and inflammable solvents are present. . . .

"Operators involved in large scale spraying or fogging with solutions of 5 per cent or more of DDT should wear respirators and other protective devices. Smoking is to be avoided during spraying when combustible mixtures are used. Greaseless

—Continued on page 76a

Stand-out

In all nutrition-influenced categories, Cerevim-fed youngsters enjoy "stand-out" superiority over others, as shown in a two-year clinical study[1] of school children.

1. Urbach, C.; Mack, P. B., and Stokes, J., Jr.: Pediatrics 1:70 (Jan.) 1948.

the children on CEREVIM showed superior

- skeletal maturity
- skeletal mineralization
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superior palatability to assure the child's direct interest in intake . . . so that

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CEREVIM
CEREALS + VITAMINS + MINERALS

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—Continued from page 74a

skin lotions should be used on exposed body surfaces when irritant solvents are present in the formulation. Clothes should be changed and the body cleansed after each day's operation."

800 Physicians Attend Conference on "Clinical Problems of Advancing Years"

More than 800 physicians of Philadelphia and vicinity attended the second symposium held recently by Smith, Kline & French Laboratories on "The Clinical Problems of Advancing Years."

A highlight of the day-long conference was the prediction made that the older generation faces longer years of work.

This prediction was made by Dr. E. V. Cowdry, Professor of Anatomy at Washington University School of Medicine and outstanding authority on old age.

"The immediate concerns of our government, and of all governments, is to combat chronic invalidism and to increase the man- and woman-power pools by effectively utilizing the labor of older people to compensate for the drain of younger ones into the armed services and war industries," Dr. Cowdry stated.

"The task of inducting older people into the labor force will not be an easy one, because they are highly individualistic and cannot be gathered in *en masse* like the youngsters who make up more uniform groups. Nevertheless the net gain is considered to be worth the effort and to have older people usefully occupied will relieve their families, reduce their demands for medical care, and improve morale throughout the nation."

In research on aging, Dr. Cowdry emphasized that "we should have our eyes glued on the main chance. I am not try-

—Continued on page 78a

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a significant advance, clinical and cosmetic, in acne therapy

NEWS AND NOTES

—Continued from page 76a

ing to depreciate the value of what is commonly called 'fundamental research' but I do think that we should here strive to distinguish between what is of most and least utilitarian value. Otherwise any direction of research on aging is rather aimless."

Virus Multiplies 200-Fold In Half Hour

One reason polio and other virus diseases spread so fast was indicated by Professor Frank W. Putnam, University of Chicago biochemist, recently when he told a symposium of the American Chemical Society's Minnesota Section that, less than a half hour after a single virus particle invades a living cell, from 200 to 300 identical particles emerge simultaneously—destroying the cell.

Professor Putnam, who described recent virus reproduction studies made with the aid of radioactive tracers, said that apparently the invading particle itself also is destroyed in the process.

Evidence that the antibodies with which the human body fights viruses and germs are not "special agents," but merely slight modifications of normal body proteins, was presented in another paper by Professor Felix Haurowitz of Indiana University.

Tiny, tadpole-shaped particles attacking common sewage bacteria have been chosen by University of Chicago scientists as test organisms in one of the first radioactive isotope studies of the growth of viruses in living cells, Professor Putnam said. These viruses, called bacteriophages, have all the characteristic properties of viruses causing diseases in humans and animals. They are too small to be seen in ordinary microscopes, but can be seen in the electron microscope, in which they appear to be

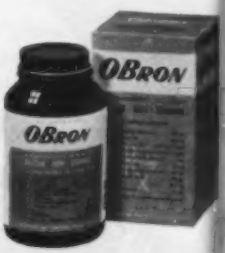
—Continued on page 80a

from the first soft whisper....

When pregnancy is *first* diagnosed, the need for *increased* amounts of calcium, phosphorous, iron and vitamins is already present.

OBron—specifically designed for the OB patient—provides balanced proportions of calcium, phosphorous, iron and vitamins to meet the added nutritional demand of the mother and to safeguard the optimal development and growth of the fetus.

Especially beneficial during the period of lactation, OBron supplies adequate vitamins and minerals to protect the nutritional state of the mother and insure an optimal content of these nutrients in the milk for the nursing child.



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Ferrous Sulphate U.S.P.....	*64.8 mg.*	Vitamin B_6 (Pyridoxine Hydrochloride)	0.5 mg.
Vitamin A (Fish-Liver Oil)...	*5,000 U.S.P. Units*	Vitamin C (Ascorbic Acid).....	37.5 mg.
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NEWS AND NOTES

—Continued from preceding page

particles about one-hundred thousandth of an inch long with an hexagonal body, or "head," and a stubby tail.

The particles survive in the absence of a living cell but reproduce themselves only within a living cell, Professor Putnam explained. The bacteriophages rather than viruses attacking animals were selected for study because they can be grown in single generations in large amounts, using inexpensive bacteria rather than costly test animals such as the monkeys required in the study of poliomyelitis, he said. Moreover, the bacteria in which the virus particles grow can be labeled with tracer substances, such as radioactive phosphorus or carbon, prepared in the "reactor piles" of the Oak Ridge (Tenn.) Laboratories.

By marking various kinds of molecules within the bacteria, the Chicago scientists hoped to determine how viruses reproduce and how they kill living cells. One theory suggested a process like digestion in which the viruses use tissue and compounds in the cell for foodstuffs. Another theory held that viruses are parasites which mobilize the chemical processes of the cell to manufacture viruses instead of normal cell constituents from foodstuffs in the surrounding medium.

Unlike bacteria or plants or animals, viruses increase in number without growing in size, Professor Putnam said. In fact, by using the ultracentrifuge, an instrument built on the principle of the cream separator but producing a force up to a quarter of a million times that of gravity, Dr. Putnam has shown that all the virus particles of the kind he studies were identical in size.

—Continued on page 82a

A MAJOR RESPONSE

Veratrite, for routine use, is a reliable hypotensive agent without serious side-effects. Circulatory improvement, a gradual fall in blood pressure, and a new sense of well-being can be obtained without complicated dosage schedules or daily dosage adjustments. Economy—a point of importance in long-range therapy—is in favor of Veratrite in the management of the great majority of hypertensive patients.

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Beginning Dose: 2 tabules t.i.d., after meals.

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NEWS AND NOTES

—Continued from preceding page

"This process of multiplication as distinguished from growth occurs only in the living cell, and therefore can not be seen even using an electron microscope," he continued. "A single virus particle invades a cell, and about 25 minutes later 200 to 300 identical particles emerge simultaneously destroying the cell. It is this latent period when the virus was hidden that was studied by means of radioactive molecules.

"Radioactive carbon or phosphorus, or 'heavy' nitrogen, were added to the solution in which healthy bacteria were growing. The carbon marked only small molecules called purines which are constituents of giant molecules of nucleic acid found in both the bacteria and the virus. The phosphorus appeared in many compounds, including the nucleic acids, of which there are two kinds in the bacteria but only one kind — 'desoxyribonucleic acid'—in the virus. The heavy nitrogen marked not only the nucleic acids but also other giant molecules called proteins, which likewise are found in both the bacteria, and the virus.

"The proteins could also be tagged with radioactive carbon if this were fed to the bacteria in the form of one of the 20-odd kinds of amino acids which are the molecular building blocks of the proteins. While many different kinds of molecules could thus be given a permanent identification tag, only one of two types were usually labeled in each experiment so that the fate of each could be determined separately.

"When healthy bacteria grown on radioactive chemicals were infected with virus, the virus progeny emerging from the dead cell contained some of the radioactivity. This was the first proof that the virus particles derive some of their substance

—Continued on page 84a

Frustrated by PSORIASIS

RIASOL

Brings Hope

Psychiatrists have found that disfiguring skin diseases like psoriasis are common causes of serious neuroses. Nothing can cause more psychological frustration to a young man or woman than the ugly patches of psoriasis.

Psychotherapy will not help so long as the patient suffers humiliation. Therefore it is important to treat the skin condition with RIASOL.

Many physicians are prescribing RIASOL for psoriasis because their own experience has proved its value. In a research study conducted in an eastern clinic, it was found that RIASOL clears or improves the skin condition of psoriasis in 76% of cases.

RIASOL contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol in a washable, non-staining, odorless vehicle.

Apply daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. No bandages required. After one week adjust to patient's progress.

RIASOL is ethically promoted. Available in 4 and 8 fld. oz. bottles, at pharmacies or direct.

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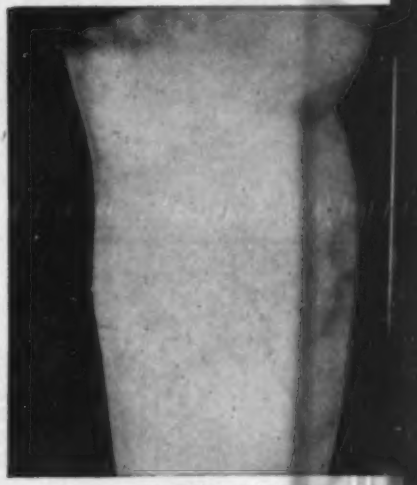

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RIASOL for PSORIASIS

NEWS AND NOTES

—Continued from page 82a

from the protoplasm of the cell. From the experiments done so far, it seems that molecules of one kind in the cell give rise only to molecules of the same kind in the virus. Thus, purines of the cell appear as purines in the virus. The amino acid lysine of the cell is unaltered when utilized by the virus.

"Most important, it was found that of the two kinds of nucleic acid in the bacterial cell, only the type which is found in the bacteriophage is used for virus multiplication. This type of nucleic acid (abbreviated as DNA by the chemist) carries all the hereditary characteristics of the cell and probably governs its growth. When the virus multiplies, it usurps all the DNA, causing destruction of the cell

"On the other hand, very little of the bacterial protein is used up to make virus protein. If a small, round bacteriophage is caused to infect the cell instead of the tadpole-shaped virus, the bacterium provides all the DNA needed by the virus, but with the tadpole-shaped bacteriophage, additional DNA had to be synthesized from chemicals in the outside medium."

Among other problems attacked by the University of Chicago biochemists was the riddle of what happens to the original virus particle which infects the cell. Radioactive virus was obtained by growth on radioactive bacteria. The labeled virus was used to infect normal bacteria and the fate of the infecting particle was traced by means of its radioactivity.

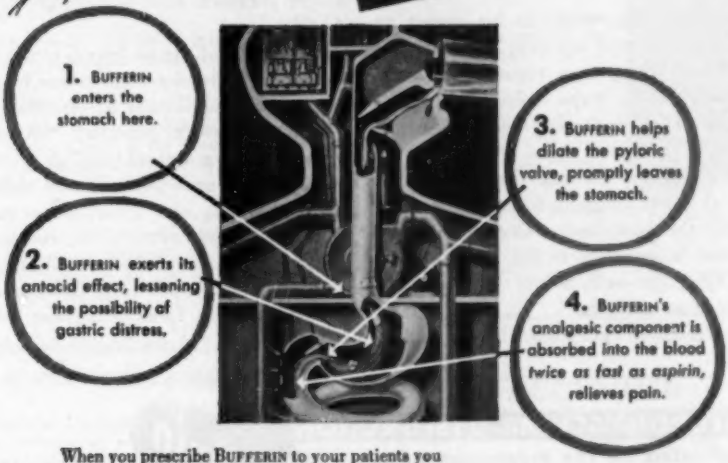
"Only a small amount of the radioactivity of the parent ended up in the progeny, indicating that the invading particle is destroyed in the process of reproduction," Professor Putnam reported. "However, each virus particle carries within itself hereditary characteristics which set the mold for the manufacture of identical par-

—Continued on page 86a

Give faster pain relief with BUFFERIN

ACTS TWICE AS FAST AS ASPIRIN

WITHOUT GASTRIC DISTRESS!



When you prescribe BUFFERIN to your patients you assure *faster relief of pain*. Clinical studies[1] show that within ten minutes after BUFFERIN is ingested, blood salicylate levels are as great as those attained by aspirin in twice this time. That is why BUFFERIN *acts twice as fast as aspirin*.

BUFFERIN has *greater gastric tolerance*. BUFFERIN's antacid ingredients provide protection against the gastric distress so often seen with aspirin.[1] BUFFERIN, therefore, is especially suited for use when prolonged use of salicylates is indicated.

1. Effect of Buffering Agents on Absorption of Acetylsalicylic Acid J. Am. Pharm. A., Sc. Ed. 39:21, Jan. 1950.

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NEWS AND NOTES

—Continued from page 84a

ticles, and it remains to be determined whether the small amount of radioactivity transferred from infecting particle to new particles is associated with genes and chromosomes as is the case with plants and animals."

The research described was supported by a grant of the National Foundation for Infantile Paralysis, Professor Putnam said.

Professor Haurowitz, in his report on antibodies, pointed out that antibody production had long been regarded as a defensive reaction, quite different from the biological processes in a healthy, normal organism.

"We know at present that this is not true, and that antibody formation is nothing but the formation of slightly modified proteins in response to the invading foreign agent," he said, noting that this agent is called an antigen.

For research purposes, he explained, artificial antigens of known chemical structure have been prepared, and in some instances tagged with radioactive atoms.

When these antigens are injected, he continued, they disappear rapidly from the blood, and most of them are deposited in the cells of the liver, the bone marrow and the spleen, which are the organs where serum proteins are formed. Within five minutes, the antigen shows up in the small granules, or microsomes, of liver or spleen cells, he stated, and shortly thereafter most of the antigen appears in the larger granules, or mitochondria, and also in the nuclei.

"The bulk of the antigen is found in the mitochondria, and remains there for many weeks while antibodies are formed," Professor Haurowitz reported. "Since the mitochondria are considered as self-duplicating units, endowed with the ability to form proteins, our observations suggest that the antigen disturbs the normal synthesis of proteins so that slightly modified proteins are formed. They differ from the normal proteins formed in these cells by

—Concluded on page 88a

A "Complete" Medical Refresher At Your Fingertips In 1 Pocket-Size Edition

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by T. M. Larkowski,* Professor of Clinical Surgery, Stritch School of Medicine, Loyola University, Chicago, Ill., and A. R. Rosanova, Clinical Instructor, University of Illinois Medical School, Chicago, Ill.

*Deceased

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This essential manual, with its 22 chapters, 450 pages and 150 illustrations contains the result-producing procedures of the authors and their sixteen capable associates. Here are the time-tested, trustworthy basic principles of the clinical practice of medicine and surgery in all its branches.

The text is concise as possible without sacrificing any of its clarity. A quick reference to this single volume places at the time-crowded doctor's finger-tips, the oft-used essential diagnoses, practical therapeutics, diagnostic aids, laboratory procedures, surgical technics plus a complete refresher on all common surgical operations.

The text of this manual is a novel departure in that it is short at times to the point of abruptness. This factor, however, is inherent in the design of the manual as the authors have purposely omitted the highly theoretical and concentrated instead on compacting all the essential and practical information possible into this one handy manual.

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—Concluded from page 86a

the fact that they combine specifically with the antigen."

The real difference between normal globulins and antibodies is most likely a matter of molecular shape, large areas of the surface of the antibody molecule resembling corresponding areas of the antigen molecule, Professor Haurowitz said.

The session, part of a three-day symposium on protein chemistry was held in the University of Minnesota Museum of Natural History.

Hospital Staff and Office Manual

The recent publication of the HOSPITAL STAFF AND OFFICE MANUAL, the new pocket size refresher, by T. M. Larkowski, Professor of Clinical Surgery, Stritch School of Medicine, Loyola University, Chicago, Ill. and A. R. Rosanova, Clinical Instructor, University of Illinois Medical School, answers a need that has been apparent for many years in the medical field. Too often physicians have to search through many textbooks to find practical answers to the many problems that confront them.

In this one single volume, the size of which readily fits in either the pocket or bag, the authors provided an instant and practical review of all phases of medical practice. Not only is there a quick refresher on the therapeutics of regularly seen conditions, but also included is a refresher on the surgical technics of most operations, routine hospital technics, laboratory procedures, electrocardiography, x-ray technics, and practically every other allied science.

Even though pocket size, the book contains 450 pages and over 150 illustrations; yet it is priced at only $4.95. The publishers are Romaine Pierson Publishers, Inc., 680 Northern Boulevard, Great Neck, N. Y.

Appointments and Awards

The New York State Department of Health recently appointed Dr. Cortez F. Enloe, Jr., as special consultant for medical supplies in the civil defense program. He will aid the department in the procurement of drugs, dressings, blood transfusion equipment and surgical supplies for emergency medical care.

The $5,000 Passano Foundation Award will be conferred jointly on Drs. Alexander S. Weiner of Brooklyn and Phillip Levine of Raritan, New Jersey, at a foundation award dinner at the Marlborough-Blenheim Hotel in Atlantic City on June 13. The award is being given to both men for their work in blood research.

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